

## 252.eon, Rushmeier command line

### Datasets profile vs. Reference Dataset

The following are the profiles for the 252.eon benchmark, Rushmeier command line. For more details about our profile development and dataset reduction methodology, refer to the paper by AJ KleinOsowski and David J. Lilja, "MinneSPEC: A New SPEC Benchmark Workload for Simulation-Based Computer Architecture Research", Computer Architecture Letters, Volume 1, June 2002. This paper is available in electronic form at <http://www.arctic.umn.edu/~lilja/minnespec/index.html>



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## Function level execution profile at optimization level O0

The following table contains function execution profiles and goodness-of-fit chi-squared statistic values for the train.rushmeier, test.rushmeier, lgred.rushmeier, mdred.rushmeier, and smred.rushmeier datasets as compared to the full SPEC reference datasets. This data was gathered with the hiprof profiling utility. \*90% Conf = Critical value of the chi-squared statistic at the 90 percent confidence level. Numbers in the Ref.rushmeier, Train.rushmeier, Test.rushmeier, Lgred.rushmeier, MdRed.rushmeier, and SmRed.rushmeier columns are the percent of overall execution time spent in the stated function (in the Function column). Numbers in the Train.rushmeier Chi, Test.rushmeier Chi, LgRed.rushmeier Chi, MdRed.rushmeier Chi, and SmRed.rushmeier Chi are the terms of the chi-squared statistic for the stated function (in the function column).

Function	Ref	Train	Train Chi	Test	Test Chi	LgRed	LgRed Chi	MdRed	MdRed Chi	SmRed	SmRed Chi
proc_at_0x12011ece8	10.30	10.20	0.00	10.70	0.02	10.20	0.00	10.30	0.00	9.20	0.12
ggSpectrum::Set(float)	8.90	8.80	0.00	8.50	0.02	8.60	0.01	9.30	0.02	8.20	0.06
proc_at_0x12011ed98	3.50	3.50	0.00	3.30	0.01	3.50	0.00	3.40	0.00	3.20	0.03
proc_at_0x12013a968	1.70	1.60	0.01	1.90	0.02	1.70	0.00	1.80	0.01	1.30	0.09
operator(constggSpectrum&,constggSpec trum&)	1.60	1.50	0.01	1.70	0.01	1.60	0.00	1.50	0.01	2.20	0.23
proc_at_0x12011ee28	1.40	1.50	0.01	1.70	0.06	1.40	0.00	1.50	0.01	1.70	0.06
mrSurfaceList::viewingHit	1.40	1.40	0.00	0.80	0.26	1.50	0.01	1.40	0.00	1.10	0.06
_OtsDivRem32	1.30	1.30	0.00	1.70	0.12	1.40	0.01	1.40	0.01	1.40	0.01
proc_at_0x12016a70c	1.30	1.30	0.00	1.40	0.01	1.10	0.03	1.10	0.03	1.30	0.00
ggSpectrum::operator=(constggSpectrum &)	1.20	1.20	0.00	1.10	0.01	1.20	0.00	1.00	0.03	1.00	0.03
ggRayXZRectangleIntersect	1.20	1.20	0.00	1.10	0.01	1.30	0.01	1.20	0.00	1.00	0.03
proc_at_0x12016ab38	1.10	1.20	0.01	1.10	0.00	0.90	0.04	1.50	0.15	1.20	0.01
mrSurfaceList::shadowHit	1.10	1.20	0.01	0.80	0.08	1.00	0.01	1.10	0.00	0.70	0.15
proc_at_0x1201018c8	1.10	1.10	0.00	1.20	0.01	1.00	0.01	1.00	0.01	0.70	0.15
proc_at_0x120138730	1.10	1.10	0.00	1.10	0.00	1.00	0.01	1.00	0.01	1.70	0.33
mrMaterial::shadowHit	1.00	1.00	0.00	1.00	0.00	1.20	0.04	0.90	0.01	1.30	0.09
sqrt	1.00	1.10	0.01	0.80	0.04	1.10	0.01	0.90	0.01	1.50	0.25
operator(constggHRigidBodyMatrix3&,&c onstggPoint3&)	1.00	1.00	0.00	1.50	0.25	0.90	0.01	0.90	0.01	0.60	0.16
proc_at_0x120101fc8	0.90	0.90	0.00	1.20	0.10	1.00	0.01	1.10	0.04	0.70	0.04
mrRushmeierPixelRenderer::rushmeierRa diance	0.90	1.00	0.01	0.70	0.04	0.80	0.01	1.10	0.04	0.90	0.00
mrGrid::viewingHit	0.80	0.90	0.01	1.10	0.11	1.00	0.05	0.80	0.00	0.60	0.05
mrMaterial::boundingBox	0.80	0.80	0.00	0.70	0.01	0.70	0.01	0.90	0.01	1.00	0.05
_OtsDivide64	0.80	0.70	0.01	0.80	0.00	0.70	0.01	0.60	0.05	0.60	0.05
proc_at_0x120101e28	0.80	0.90	0.01	0.80	0.00	0.70	0.01	0.80	0.00	0.90	0.01
proc_at_0x120139688	0.80	0.80	0.00	0.90	0.01	0.70	0.01	0.70	0.01	0.40	0.20
proc_at_0x12016af40	0.70	0.70	0.00	0.40	0.13	0.60	0.01	0.90	0.06	0.60	0.01
proc_at_0x12013a5e0	0.70	0.80	0.01	0.90	0.06	0.80	0.01	0.70	0.00	0.60	0.01
mrMaterial::viewingHit	0.70	0.70	0.00	0.40	0.13	0.70	0.00	0.80	0.01	0.70	0.00
proc_at_0x12016a7ec	0.70	0.70	0.00	0.80	0.01	0.70	0.00	0.80	0.01	0.80	0.01
ggRayBoxIntersect	0.70	0.70	0.00	0.60	0.01	0.70	0.00	0.90	0.06	0.80	0.01
proc_at_0x12016b708	0.70	0.70	0.00	0.40	0.13	0.80	0.01	0.50	0.06	0.50	0.06
proc_at_0x120101f78	0.70	0.70	0.00	0.60	0.01	0.60	0.01	0.80	0.01	1.10	0.23
proc_at_0x12010184c	0.60	0.70	0.02	0.30	0.15	0.50	0.02	0.50	0.02	0.60	0.00
operator(constggHRigidBodyMatrix3&,&c onstggVector3&)	0.60	0.60	0.00	0.60	0.00	0.60	0.00	0.60	0.00	0.30	0.15
proc_at_0x12013b090	0.60	0.60	0.00	0.40	0.07	0.60	0.00	0.50	0.02	0.50	0.02
proc_at_0x12016acd0	0.60	0.60	0.00	0.80	0.07	0.70	0.02	0.50	0.02	0.50	0.02
mrrushmeierPixelRenderer::directLight	0.60	0.50	0.02	0.40	0.07	0.70	0.02	0.60	0.00	1.20	0.60
mrInstance::shadowHit	0.60	0.60	0.00	0.90	0.15	0.60	0.00	0.70	0.02	0.30	0.15

ggSpectrum::operator+=(constggSpectrum&)	0.60	0.60	0.00	0.90	0.15	0.50	0.02	0.50	0.02	0.40	0.07
proc_at_0x12016b890	0.60	0.50	0.02	0.40	0.07	0.50	0.02	0.50	0.02	0.50	0.02
operator(float,constggSpectrum&)	0.60	0.50	0.02	0.40	0.07	0.60	0.00	0.50	0.02	0.80	0.07
proc_at_0x12016b800	0.50	0.50	0.00	0.40	0.02	0.70	0.08	0.50	0.00	1.30	1.28
proc_at_0x12016a448	0.50	0.50	0.00	0.40	0.02	0.50	0.00	0.50	0.00	0.40	0.02
proc_at_0x12016ac2c	0.50	0.60	0.02	0.80	0.18	0.50	0.00	0.50	0.00	0.40	0.02
proc_at_0x12010db4c	0.50	0.60	0.02	0.60	0.02	0.50	0.00	0.60	0.02	0.70	0.08
proc_at_0x120138bc8	0.50	0.50	0.00	1.10	0.72	0.60	0.02	0.70	0.08	0.30	0.08
ggRayYZRectangleIntersect	0.50	0.50	0.00	0.80	0.18	0.40	0.02	0.60	0.02	0.60	0.02
proc_at_0x12016a868	0.50	0.50	0.00	0.60	0.02	0.60	0.02	0.40	0.02	0.60	0.02
mrXZRectangle::shadowHit	0.50	0.40	0.02	0.40	0.02	0.60	0.02	0.60	0.02	0.60	0.02
proc_at_0x12016a828	0.50	0.40	0.02	0.10	0.32	0.50	0.00	0.50	0.00	0.30	0.08
proc_at_0x12013a3c8	0.50	0.40	0.02	0.40	0.02	0.40	0.02	0.40	0.02	0.20	0.18
proc_at_0x120138100	0.50	0.50	0.00	0.60	0.02	0.50	0.00	0.40	0.02	0.40	0.02
proc_at_0x12013805c	0.50	0.40	0.02	0.40	0.02	0.60	0.02	0.50	0.00	0.40	0.02
proc_at_0x12016b02c	0.50	0.50	0.00	0.50	0.00	0.40	0.02	0.40	0.02	0.40	0.02
proc_at_0x12016ac80	0.50	0.50	0.00	0.60	0.02	0.50	0.00	0.40	0.02	1.00	0.50
proc_at_0x12016aff0	0.50	0.50	0.00	0.20	0.18	0.50	0.00	0.50	0.00	0.30	0.08
proc_at_0x120101810	0.50	0.50	0.00	0.50	0.00	0.40	0.02	0.50	0.00	0.30	0.08
proc_at_0x12016ad20	0.50	0.40	0.02	0.50	0.00	0.40	0.02	0.40	0.02	0.60	0.02
proc_at_0x12010d64c	0.50	0.50	0.00	0.20	0.18	0.40	0.02	0.50	0.00	0.50	0.00
my_rand(void)	0.40	0.40	0.00	0.40	0.00	0.40	0.00	0.20	0.10	0.30	0.03
proc_at_0x1201016d0	0.40	0.50	0.02	0.50	0.02	0.50	0.02	0.20	0.10	0.30	0.03
proc_at_0x120138b04	0.40	0.40	0.00	0.40	0.00	0.40	0.00	0.50	0.02	0.20	0.10
proc_at_0x120138670	0.40	0.50	0.02	0.40	0.00	0.50	0.02	0.40	0.00	0.50	0.02
proc_at_0x12016b840	0.40	0.40	0.00	0.10	0.23	0.40	0.00	0.50	0.02	0.60	0.10
proc_at_0x1201386b0	0.40	0.40	0.00	0.20	0.10	0.40	0.00	0.40	0.00	0.60	0.10
proc_at_0x120138450	0.40	0.50	0.02	0.10	0.23	0.30	0.03	0.50	0.02	0.30	0.03
proc_at_0x12013a7f4	0.40	0.40	0.00	0.20	0.10	0.30	0.03	0.40	0.00	0.10	0.23
proc_at_0x12016a5f8	0.40	0.40	0.00	0.40	0.00	0.40	0.00	0.40	0.00	0.60	0.10
proc_at_0x12013ad90	0.40	0.40	0.00	0.60	0.10	0.40	0.00	0.50	0.02	0.60	0.10
proc_at_0x1201386f0	0.40	0.40	0.00	0.40	0.00	0.40	0.00	0.50	0.02	0.20	0.10
proc_at_0x12016a408	0.40	0.50	0.02	0.30	0.03	0.40	0.00	0.30	0.03	0.50	0.02
mrGrid::shadowHit	0.40	0.40	0.00	0.50	0.02	0.40	0.00	0.60	0.10	0.30	0.03
proc_at_0x120139648	0.40	0.40	0.00	0.20	0.10	0.30	0.03	0.40	0.00	0.00	0.40
proc_at_0x12016a900	0.40	0.30	0.03	0.80	0.40	0.40	0.00	0.40	0.00	0.40	0.00
proc_at_0x12012f618	0.40	0.40	0.00	0.50	0.02	0.40	0.00	0.30	0.03	0.40	0.00
proc_at_0x120101da8	0.40	0.30	0.03	0.60	0.10	0.40	0.00	0.30	0.03	0.50	0.02
proc_at_0x120138564	0.40	0.40	0.00	0.40	0.00	0.30	0.03	0.40	0.00	0.10	0.23
proc_at_0x12016b068	0.40	0.30	0.03	0.50	0.02	0.40	0.00	0.30	0.03	0.30	0.03
proc_at_0x12016aa1c	0.40	0.40	0.00	0.60	0.10	0.40	0.00	0.40	0.00	0.30	0.03
ggDiffuseVector	0.40	0.40	0.00	0.20	0.10	0.40	0.00	0.20	0.10	0.10	0.23
proc_at_0x12016a650	0.40	0.40	0.00	0.30	0.03	0.40	0.00	0.20	0.10	0.20	0.10
proc_at_0x12016b168	0.40	0.30	0.03	0.30	0.03	0.30	0.03	0.40	0.00	0.10	0.23
proc_at_0x12010d6c8	0.30	0.40	0.03	0.30	0.00	0.30	0.00	0.30	0.00	0.40	0.03
proc_at_0x12010dbc8	0.30	0.30	0.00	0.30	0.00	0.40	0.03	0.30	0.00	0.10	0.13
proc_at_0x12016a49c	0.30	0.30	0.00	0.30	0.00	0.40	0.03	0.30	0.00	0.50	0.13
proc_at_0x12010db88	0.30	0.40	0.03	0.10	0.13	0.30	0.00	0.30	0.00	0.60	0.30
proc_at_0x120101888	0.30	0.30	0.00	0.20	0.03	0.30	0.00	0.40	0.03	0.40	0.03
proc_at_0x120138510	0.30	0.30	0.00	0.50	0.13	0.30	0.00	0.50	0.13	0.30	0.00
mrYZRectangle::viewingHit	0.30	0.30	0.00	0.60	0.30	0.30	0.00	0.30	0.00	0.00	0.30
proc_at_0x120101d68	0.30	0.40	0.03	0.30	0.00	0.30	0.00	0.20	0.03	0.70	0.53
proc_at_0x12010d688	0.30	0.30	0.00	0.50	0.13	0.30	0.00	0.40	0.03	0.50	0.13
mrXZRectangle::viewingHit	0.30	0.40	0.03	0.40	0.03	0.30	0.00	0.30	0.00	0.50	0.13
mrInstance::boundingBox	0.30	0.30	0.00	0.20	0.03	0.30	0.00	0.40	0.03	0.30	0.00
proc_at_0x1201385b4	0.30	0.30	0.00	0.40	0.03	0.30	0.00	0.30	0.00	0.30	0.00

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proc_at_0x120138ab4	0.30	0.30	0.00	0.50	0.13	0.30	0.00	0.30	0.00	0.40	0.03
proc_at_0x12010dafc	0.30	0.30	0.00	0.30	0.00	0.30	0.00	0.20	0.03	0.10	0.13
proc_at_0x12016a260	0.30	0.30	0.00	0.30	0.00	0.20	0.03	0.40	0.03	0.80	0.83
proc_at_0x1201385f0	0.30	0.30	0.00	0.30	0.00	0.30	0.00	0.30	0.00	0.20	0.03
proc_at_0x12016a8a8	0.30	0.30	0.00	0.60	0.30	0.30	0.00	0.40	0.03	0.20	0.03
proc_at_0x12016a75c	0.30	0.30	0.00	0.10	0.13	0.30	0.00	0.30	0.00	0.60	0.30
mrInstance::selectVisiblePoint	0.30	0.20	0.03	0.10	0.13	0.20	0.03	0.30	0.00	0.10	0.13
proc_at_0x120138630	0.30	0.30	0.00	0.30	0.00	0.30	0.00	0.20	0.03	0.20	0.03
proc_at_0x12010daa8	0.30	0.30	0.00	0.30	0.00	0.30	0.00	0.30	0.00	0.30	0.00
operator(constggHRigidBodyMatrix3&,&c onstggRay3&)	0.30	0.30	0.00	0.20	0.03	0.30	0.00	0.30	0.00	0.20	0.03
proc_at_0x12010d554	0.30	0.30	0.00	0.30	0.00	0.30	0.00	0.30	0.00	0.40	0.03
proc_at_0x120138e64	0.30	0.30	0.00	0.10	0.13	0.30	0.00	0.30	0.00	0.10	0.13
proc_at_0x12016a6b8	0.30	0.30	0.00	0.20	0.03	0.40	0.03	0.30	0.00	0.40	0.03
proc_at_0x12012f31c	0.30	0.20	0.03	0.30	0.00	0.30	0.00	0.30	0.00	0.40	0.03
proc_at_0x12011ec90	0.30	0.30	0.00	0.10	0.13	0.20	0.03	0.30	0.00	0.40	0.03
proc_at_0x120101de8	0.30	0.30	0.00	0.40	0.03	0.40	0.03	0.30	0.00	0.30	0.00
proc_at_0x120138788	0.20	0.20	0.00	0.20	0.00	0.20	0.00	0.20	0.00	0.20	0.00
proc_at_0x12012ffa0	0.20	0.20	0.00	0.30	0.05	0.20	0.00	0.20	0.00	0.20	0.00
proc_at_0x1201384a8	0.20	0.30	0.05	0.30	0.05	0.20	0.00	0.30	0.05	0.30	0.05
sin	0.20	0.20	0.00	0.30	0.05	0.20	0.00	0.20	0.00	0.10	0.05
proc_at_0x12012fb60	0.20	0.20	0.00	0.40	0.20	0.20	0.00	0.30	0.05	0.30	0.05
proc_at_0x120138b54	0.20	0.20	0.00	0.20	0.00	0.30	0.05	0.30	0.05	0.60	0.80
proc_at_0x12010d5a8	0.20	0.20	0.00	0.10	0.05	0.30	0.05	0.10	0.05	0.20	0.00
proc_at_0x120135afc	0.20	0.20	0.00	0.20	0.00	0.30	0.05	0.10	0.05	0.50	0.45
proc_at_0x12013ac70	0.20	0.20	0.00	0.10	0.05	0.30	0.05	0.20	0.00	0.30	0.05
proc_at_0x1201306b8	0.20	0.20	0.00	0.20	0.00	0.30	0.05	0.20	0.00	0.30	0.05
proc_at_0x12016a2f8	0.20	0.20	0.00	0.10	0.05	0.20	0.00	0.30	0.05	0.20	0.00
proc_at_0x12016a57c	0.20	0.20	0.00	0.30	0.05	0.20	0.00	0.20	0.00	0.20	0.00
proc_at_0x120135aa8	0.20	0.20	0.00	0.30	0.05	0.30	0.05	0.20	0.00	0.30	0.05
proc_at_0x12016a540	0.20	0.20	0.00	0.10	0.05	0.30	0.05	0.10	0.05	0.40	0.20
proc_at_0x1201307bc	0.20	0.20	0.00	0.40	0.20	0.20	0.00	0.20	0.00	0.40	0.20
proc_at_0x12012f958	0.20	0.10	0.05	0.10	0.05	0.20	0.00	0.20	0.00	0.30	0.05
proc_at_0x120135de8	0.20	0.20	0.00	0.20	0.00	0.20	0.00	0.20	0.00	0.40	0.20
proc_at_0x1201382f4	0.20	0.20	0.00	0.10	0.05	0.20	0.00	0.20	0.00	0.10	0.05
ggDiffuseMaterial::getInfo	0.20	0.20	0.00	0.10	0.05	0.20	0.00	0.20	0.00	0.50	0.45
cos	0.20	0.20	0.00	0.10	0.05	0.30	0.05	0.20	0.00	0.30	0.05
proc_at_0x120138410	0.20	0.20	0.00	0.10	0.05	0.10	0.05	0.20	0.00	0.10	0.05
proc_at_0x120135d28	0.20	0.20	0.00	0.20	0.00	0.10	0.05	0.20	0.00	0.30	0.05
proc_at_0x12010de78	0.20	0.20	0.00	0.30	0.05	0.20	0.00	0.10	0.05	0.10	0.05
ggRayXYRectangleIntersect	0.20	0.20	0.00	0.10	0.05	0.20	0.00	0.20	0.00	0.10	0.05
mrMaterial::selectVisiblePoint	0.20	0.10	0.05	0.20	0.00	0.10	0.05	0.20	0.00	0.30	0.05
proc_at_0x120138398	0.20	0.20	0.00	0.00	0.20	0.20	0.00	0.20	0.00	0.10	0.05
mrDiffuseAreaXZRectangleLuminaire::sh adowHit	0.20	0.20	0.00	0.10	0.05	0.10	0.05	0.20	0.00	0.20	0.00
proc_at_0x1200dbea4	0.20	0.20	0.00	0.10	0.05	0.20	0.00	0.20	0.00	0.00	0.20
proc_at_0x12010dcc8	0.20	0.20	0.00	0.30	0.05	0.20	0.00	0.20	0.00	0.20	0.00
proc_at_0x12016a5b8	0.20	0.20	0.00	0.10	0.05	0.10	0.05	0.10	0.05	0.20	0.00
proc_at_0x12010d708	0.20	0.20	0.00	0.30	0.05	0.10	0.05	0.20	0.00	0.20	0.00
proc_at_0x12010ddd8	0.20	0.10	0.05	0.10	0.05	0.20	0.00	0.20	0.00	0.20	0.00
proc_at_0x1201752f0	0.10	0.20	0.10	0.40	0.90	0.10	0.00	0.40	0.90	0.00	0.10
proc_at_0x12016a3b8	0.10	0.20	0.10	0.30	0.40	0.10	0.00	0.20	0.10	0.00	0.10
proc_at_0x12012f068	0.10	0.20	0.10	0.30	0.40	0.20	0.10	0.20	0.10	0.00	0.10
proc_at_0x12015af28	0.10	0.20	0.10	0.30	0.40	0.10	0.00	0.10	0.00	0.20	0.10
proc_at_0x12015ad18	0.10	0.20	0.10	0.00	0.10	0.10	0.00	0.20	0.10	0.30	0.40
proc_at_0x1201383d4	0.10	0.20	0.10	0.00	0.10	0.20	0.10	0.20	0.10	0.30	0.40
proc_at_0x1201022f8	0.10	0.10	0.00	0.10	0.00	0.10	0.00	0.10	0.00	0.10	0.00
proc_at_0x120175330	0.10	0.10	0.00	0.10	0.00	0.20	0.10	0.10	0.00	0.10	0.00

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proc_at_0x12013073c	0.10	0.10	0.00	0.30	0.40	0.10	0.00	0.10	0.00	0.30	0.40
proc_at_0x12013631c	0.10	0.20	0.10	0.10	0.00	0.20	0.10	0.20	0.10	0.00	0.10
proc_at_0x12012f778	0.10	0.20	0.10	0.30	0.40	0.10	0.00	0.20	0.10	0.20	0.10
proc_at_0x120138ce0	0.10	0.10	0.00	0.20	0.10	0.10	0.00	0.20	0.10	0.10	0.00
mrRushmeierPixelRenderer::samplePixel	0.10	0.10	0.00	0.10	0.00	0.20	0.10	0.20	0.10	0.20	0.10
proc_at_0x12012fcb8	0.10	0.20	0.10	0.10	0.00	0.20	0.10	0.10	0.00	0.00	0.10
proc_at_0x120138c18	0.10	0.20	0.10	0.00	0.10	0.10	0.00	0.20	0.10	0.20	0.10
proc_at_0x12012f4ac	0.10	0.10	0.00	0.10	0.00	0.10	0.00	0.10	0.00	0.00	0.10
proc_at_0x12012f8a8	0.10	0.10	0.00	0.10	0.00	0.10	0.00	0.10	0.00	0.00	0.10
ggPinholeCamera::getRay	0.10	0.10	0.00	0.00	0.10	0.20	0.10	0.00	0.10	0.30	0.40
proc_at_0x12012efac	0.10	0.10	0.00	0.30	0.40	0.10	0.00	0.10	0.00	0.40	0.90
proc_at_0x12015adc4	0.10	0.10	0.00	0.00	0.10	0.10	0.00	0.10	0.00	0.00	0.10
mrXZRectangle::boundingBox	0.10	0.10	0.00	0.10	0.00	0.10	0.00	0.20	0.10	0.10	0.00
proc_at_0x120138d34	0.10	0.10	0.00	0.30	0.40	0.20	0.10	0.10	0.00	0.30	0.40
proc_at_0x12017e278	0.10	0.10	0.00	0.10	0.00	0.10	0.00	0.10	0.00	0.10	0.00
mrBox::shadowHit	0.10	0.10	0.00	0.30	0.40	0.10	0.00	0.20	0.10	0.00	0.10
proc_at_0x12012eed8	0.10	0.10	0.00	0.00	0.10	0.10	0.00	0.10	0.00	0.00	0.10
mrInstance::viewingHit	0.10	0.20	0.10	0.00	0.10	0.10	0.00	0.20	0.10	0.00	0.10
operator(constggHAffineMatrix3&,&constggPoint3&)	0.10	0.10	0.00	0.10	0.00	0.10	0.00	0.10	0.00	0.00	0.10
proc_at_0x1200fe574	0.10	0.10	0.00	0.20	0.10	0.10	0.00	0.10	0.00	0.00	0.10
proc_at_0x1201362cc	0.10	0.10	0.00	0.00	0.10	0.10	0.00	0.10	0.00	0.10	0.00
proc_at_0x120135ba0	0.10	0.10	0.00	0.00	0.10	0.10	0.00	0.10	0.00	0.20	0.10
ggJitterSample2::Generate(void)	0.10	0.10	0.00	0.00	0.10	0.10	0.00	0.10	0.00	0.00	0.10
proc_at_0x12010de28	0.10	0.10	0.00	0.00	0.10	0.10	0.00	0.10	0.00	0.20	0.10
ggTrain<ggPoint2>::Append(ggPoint2)	0.10	0.10	0.00	0.00	0.10	0.10	0.00	0.10	0.00	0.00	0.10
ggTrain<ggSpectrum>::Append(ggSpectrum)	0.10	0.10	0.00	0.10	0.00	0.10	0.00	0.00	0.10	0.10	0.00
proc_at_0x12012f36c	0.10	0.10	0.00	0.10	0.00	0.10	0.00	0.10	0.00	0.00	0.10
proc_at_0x1200e4218	0.10	0.10	0.00	0.10	0.00	0.10	0.00	0.10	0.00	0.20	0.10
proc_at_0x12012ff48	0.10	0.10	0.00	0.20	0.10	0.10	0.00	0.10	0.00	0.10	0.00
mrXYRectangle::viewingHit	0.10	0.10	0.00	0.10	0.00	0.10	0.00	0.10	0.00	0.60	2.50
proc_at_0x12015b240	0.10	0.10	0.00	0.10	0.00	0.10	0.00	0.10	0.00	0.20	0.10
proc_at_0x1200fe92c	0.10	0.10	0.00	0.10	0.00	0.10	0.00	0.10	0.00	0.00	0.10
proc_at_0x12012f6e8	0.10	0.10	0.00	0.30	0.40	0.10	0.00	0.10	0.00	0.10	0.00
proc_at_0x12012f0a8	0.10	0.10	0.00	0.10	0.00	0.10	0.00	0.10	0.00	0.10	0.00
proc_at_0x12017eee0	0.10	0.10	0.00	0.20	0.10	0.10	0.00	0.10	0.00	0.00	0.10
proc_at_0x120102468	0.10	0.10	0.00	0.00	0.10	0.10	0.00	0.10	0.00	0.10	0.00
proc_at_0x120109004	0.10	0.10	0.00	0.10	0.00	0.10	0.00	0.10	0.00	0.00	0.10
proc_at_0x120137338	0.10	0.10	0.00	0.10	0.00	0.10	0.00	0.00	0.10	0.00	0.10
proc_at_0x12016ad98	0.10	0.10	0.00	0.00	0.10	0.10	0.00	0.10	0.00	0.30	0.40
mrYZRectangle::boundingBox	0.10	0.10	0.00	0.10	0.00	0.10	0.00	0.00	0.10	0.30	0.40
proc_at_0x12012f1a0	0.10	0.10	0.00	0.20	0.10	0.10	0.00	0.00	0.10	0.00	0.10
proc_at_0x120135bf8	0.10	0.10	0.00	0.30	0.40	0.10	0.00	0.00	0.10	0.00	0.10
proc_at_0x120102348	0.10	0.10	0.00	0.10	0.00	0.10	0.00	0.10	0.00	0.00	0.10
proc_at_0x120102398	0.10	0.10	0.00	0.10	0.00	0.10	0.00	0.10	0.00	0.10	0.00
proc_at_0x12017e41c	0.10	0.10	0.00	0.00	0.10	0.10	0.00	0.10	0.00	0.10	0.00
mrDiffuseAreaXZRectangleLuminaire::selectVisiblePoint	0.10	0.10	0.00	0.10	0.00	0.10	0.00	0.00	0.10	0.00	0.10
mrYZRectangle::shadowHit	0.10	0.10	0.00	0.10	0.00	0.10	0.00	0.10	0.00	0.10	0.00
proc_at_0x12017f084	0.10	0.10	0.00	0.00	0.10	0.10	0.00	0.10	0.00	0.10	0.00
ggDiffuseBRDF::averageValue(void)	0.10	0.10	0.00	0.20	0.10	0.10	0.00	0.00	0.10	0.20	0.10
proc_at_0x120108f60	0.10	0.10	0.00	0.10	0.00	0.10	0.00	0.10	0.00	0.20	0.10
proc_at_0x120101bc8	0.10	0.10	0.00	0.10	0.00	0.10	0.00	0.10	0.00	0.10	0.00
proc_at_0x120136408	0.10	0.10	0.00	0.10	0.00	0.10	0.00	0.00	0.10	0.20	0.10
mrXYRectangle::boundingBox	0.10	0.10	0.00	0.00	0.10	0.10	0.00		0.10	0.20	0.10
proc_at_0x12012f680	0.10	0.10	0.00	0.00	0.10	0.10	0.00	0.10	0.00	0.10	0.00
proc_at_0x12017efd4	0.10	0.10	0.00	0.10	0.00	0.10	0.00	0.10	0.00	0.10	0.00

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proc_at_0x120109080	0.10	0.10	0.00	0.20	0.10	0.10	0.00	0.10	0.00	0.10	0.00
proc_at_0x12012ef6c	0.10	0.10	0.00	0.10	0.00	0.10	0.00	0.10	0.00	0.00	0.10
proc_at_0x1201024b8	0.10	0.10	0.00	0.10	0.00	0.10	0.00	0.10	0.00	0.00	0.10
proc_at_0x120109040	0.10	0.10	0.00	0.20	0.10	0.10	0.00	0.10	0.00	0.10	0.00
proc_at_0x12012f1f8	0.10	0.10	0.00	0.10	0.00	0.10	0.00	0.10	0.00	0.00	0.10
proc_at_0x1200dbf68	0.10	0.00	0.10	0.10	0.00	0.10	0.00	0.00	0.10	0.00	0.10
proc_at_0x12010176c	0.10	0.10	0.00	0.10	0.00	0.10	0.00	0.10	0.00	0.10	0.00
proc_at_0x1200e40d4	0.10	0.10	0.00	0.10	0.00	0.10	0.00	0.10	0.00	0.20	0.10
proc_at_0x1200e4d88	0.10	0.00	0.10	0.10	0.00	0.10	0.00	0.10	0.00	0.10	0.00
mrBox::viewingHit	0.10	0.10	0.00	0.00	0.10	0.00	0.10	0.00	0.10	0.00	0.10
proc_at_0x120101b8c	0.10	0.10	0.00	0.10	0.00	0.10	0.00	0.10	0.00	0.30	0.40
mrXYRectangle::shadowHit	0.10	0.10	0.00	0.10	0.00	0.10	0.00	0.00	0.10	0.00	0.10
proc_at_0x12017d610	0.10	0.10	0.00	0.00	0.10	0.00	0.10	0.00	0.10	0.00	0.10
proc_at_0x12012f7cc	0.10	0.00	0.10	0.10	0.00	0.10	0.00	0.00	0.10	0.10	0.00
proc_at_0x120136108	0.10	0.10	0.00	0.00	0.10	0.00	0.10	0.10	0.00	0.10	0.00
proc_at_0x1200fe5c8	0.10	0.10	0.00	0.00	0.10	0.00	0.10	0.00	0.10	0.00	0.10
proc_at_0x1201372fc	0.10	0.00	0.10	0.10	0.00	0.10	0.00	0.10	0.00	0.00	0.10
ggDiffuseBRDF::value	0.10	0.10	0.00	0.00	0.10	0.10	0.00	0.00	0.10	0.00	0.10
proc_at_0x12017e12c	0.10	0.10	0.00	0.00	0.10	0.10	0.00	0.00	0.10	0.00	0.10
proc_at_0x12012f0fc	0.10	0.10	0.00	0.00	0.10	0.00	0.10	0.10	0.00	0.10	0.00
proc_at_0x1200e45a4	0.10	0.10	0.00	0.10	0.00	0.10	0.00	0.00	0.10	0.00	0.10
Sum	98.70	99.20	2.42	98.30	17.94	98.10	3.14	98.20	6.64	97.70	26.76
	Ref	Train	Train	Test	Test	LgRed	LgRed	MdRed	MdRed	SmRed	SmRed
			Chi		Chi		Chi		Chi		Chi

90% Confidence level (226 entries) = 252.578

252.eon, rushmeier command line

## Function level execution profile at optimization level O1

The following table contains function execution profiles and goodness-of-fit chi-squared statistic values for the train.rushmeier, test.rushmeier, lgred.rushmeier, mdred.rushmeier, and smred.rushmeier datasets as compared to the full SPEC reference datasets. This data was gathered with the hiprof profiling utility. \*90% Conf = Critical value of the chi-squared statistic at the 90 percent confidence level. Numbers in the Ref.rushmeier, Train.rushmeier, Test.rushmeier, Lgred.rushmeier, MdRed.rushmeier, and SmRed.rushmeier columns are the percent of overall execution time spent in the stated function (in the Function column). Numbers in the Train.rushmeier Chi, Test.rushmeier Chi, LgRed.rushmeier Chi, MdRed.rushmeier Chi, and SmRed.rushmeier Chi are the terms of the chi-squared statistic for the stated function (in the function column).

Function	Ref	Train	Train Chi	Test	Test Chi	LgRed	LgRed Chi	MdRed	MdRed Chi	SmRed	SmRed Chi
ggSpectrum::Set(float)	15.90	16.20	0.01	16.30	0.01	14.00	0.23	13.00	0.53	20.50	1.33
mrSurfaceList::viewingHit	11.60	11.50	0.00	10.20	0.17	12.00	0.01	12.10	0.02	13.50	0.31
proc_at_0x1200ec668	8.70	8.40	0.01	6.00	0.84	10.20	0.26	7.70	0.11	5.90	0.90
proc_at_0x1200ec068	5.10	5.00	0.00	6.00	0.16	4.50	0.07	4.20	0.16	2.20	1.65
operator(constggSpectrum&,constggSpectrum&)	3.50	3.40	0.00	3.50	0.00	3.50	0.00	4.20	0.14	3.20	0.03
ggSpectrum::operator=(constggSpectrum&)	3.20	3.20	0.00	3.50	0.03	3.90	0.15	3.50	0.03	0.50	2.28
mrGrid::viewingHit	3.00	2.90	0.00	4.20	0.48	2.40	0.12	3.20	0.01	3.20	0.01
mrRushmeierPixelRenderer::rushmeierRadiance	2.40	2.70	0.04	3.50	0.50	2.30	0.00	3.20	0.27	3.20	0.27
sqrt	2.40	2.90	0.10	0.00	2.40	3.10	0.20	2.30	0.00	2.70	0.04
ggRayXZRectangleIntersect	2.20	2.30	0.00	2.10	0.00	2.60	0.07	2.60	0.07	1.10	0.55
mrMaterial::shadowHit	2.20	1.90	0.04	2.10	0.00	2.00	0.02	3.00	0.29	2.20	0.00
mrMaterial::viewingHit	2.10	1.90	0.02	1.40	0.23	1.90	0.02	2.00	0.00	0.50	1.22
mrSurfaceList::shadowHit	2.00	2.30	0.04	2.10	0.01	1.80	0.02	1.70	0.05	3.20	0.72
operator(constggHRigidBodyMatrix3&,constggRay3&)	1.70	1.80	0.01	1.80	0.01	1.50	0.02	1.90	0.02	1.60	0.01
my_rand(void)	1.70	2.10	0.09	2.10	0.09	2.00	0.05	1.70	0.00	1.60	0.01
mrMaterial::boundingBox	1.60	1.70	0.01	0.70	0.51	1.70	0.01	2.00	0.10	1.10	0.16
mrrushmeierPixelRenderer::directLight	1.50	1.40	0.01	2.10	0.24	1.90	0.11	1.40	0.01	1.10	0.11
ggRayBoxIntersect	1.40	1.60	0.03	1.80	0.11	1.60	0.03	1.00	0.11	1.60	0.03
ggDiffuseMaterial::getInfo	1.40	1.30	0.01	0.70	0.35	1.80	0.11	1.90	0.18	1.10	0.06
mrInstance::shadowHit	1.40	1.40	0.00	1.10	0.06	1.40	0.00	1.80	0.11	2.20	0.46
mrGrid::shadowHit	1.40	1.20	0.03	2.50	0.86	1.00	0.11	1.30	0.01	1.10	0.06
mrRushmeierPixelRenderer::samplePixel	1.40	1.50	0.01	1.10	0.06	1.00	0.11	1.80	0.11	1.10	0.06
mrXZRectangle::shadowHit	1.40	1.30	0.01	1.40	0.00	1.60	0.03	1.20	0.03	1.60	0.03
operator(float,constggSpectrum&)	1.20	1.10	0.01	0.40	0.53	0.90	0.07	0.60	0.30	1.10	0.01
mrXZRectangle::viewingHit	1.20	1.20	0.00	1.40	0.03	1.00	0.03	1.20	0.00	0.50	0.41
ggSpectrum::operator+=(constggSpectrum&)	1.10	1.20	0.01	0.40	0.45	0.70	0.15	0.70	0.15	2.70	2.33
operator(constggHRigidBodyMatrix3&,constggPoint3&)	1.10	1.00	0.01	2.10	0.91	1.10	0.00	1.30	0.04	1.10	0.00
proc_at_0x1200ebe48	1.10	1.20	0.01	0.40	0.45	0.80	0.08	1.30	0.04	0.50	0.33
mrYZRectangle::viewingHit	1.00	1.00	0.00	0.40	0.36	1.40	0.16	1.00	0.00	1.60	0.36
operator(constggHRigidBodyMatrix3&,constggVector3&)	1.00	1.00	0.00	1.80	0.64	0.80	0.04	1.60	0.36	1.10	0.01
ggJitterSample2::Generate(void)	1.00	1.00	0.00	1.10	0.01	0.70	0.09	1.50	0.25	1.60	0.36
mrInstance::selectVisiblePoint	0.90	0.90	0.00	1.80	0.90	1.20	0.10	0.80	0.01	1.10	0.04
ggRayYZRectangleIntersect	0.90	0.70	0.04	1.40	0.28	1.10	0.04	0.90	0.00	1.10	0.04
mrInstance::boundingBox	0.80	0.90	0.01	1.40	0.45	0.80	0.00	0.70	0.01	0.50	0.11
sin	0.80	0.70	0.01	1.40	0.45	0.50	0.11	0.80	0.00	0.00	0.80
cos	0.70	0.60	0.01	0.00	0.70	0.70	0.00	0.90	0.06	0.00	0.70
ggDiffuseVector	0.60	0.80	0.07	0.70	0.02	0.80	0.07	0.60	0.00	0.00	0.60

mrDiffuseAreaXZRectangleLuminaire::shadowHit	0.60	0.70	0.02	0.70	0.02	0.30	0.15	0.70	0.02	0.00	0.60
mrBox::shadowHit	0.60	0.60	0.00	0.70	0.02	0.20	0.27	0.40	0.07	1.10	0.42
ggPinholeCamera::getRay	0.50	0.50	0.00	1.40	1.62	0.50	0.00	0.60	0.02	1.10	0.72
ggTrain<ggPoint2>::Append(ggPoint2)	0.50	0.50	0.00	0.00	0.50	0.80	0.18	0.60	0.02	0.00	0.50
mrXZRectangle::boundingBox	0.40	0.20	0.10	0.40	0.00	0.20	0.10	0.80	0.40	1.10	1.23
mrXYRectangle::viewingHit	0.40	0.40	0.00	0.00	0.40	0.40	0.00	0.80	0.40	0.00	0.40
ggDiffuseBRDF::averageValue(void)	0.30	0.30	0.00	0.00	0.30	0.60	0.30	0.20	0.03	0.50	0.13
ggRayXYRectangleIntersect	0.30	0.20	0.03	0.00	0.30	0.20	0.03	0.50	0.13	0.00	0.30
ggTrain<ggSpectrum>::Append(ggSpectrum)	0.30	0.30	0.00	0.00	0.30	0.10	0.13	0.20	0.03	0.50	0.13
mrYZRectangle::boundingBox	0.30	0.30	0.00	0.00	0.30	0.20	0.03	0.10	0.13	0.00	0.30
ggDiffuseBRDF::value	0.30	0.30	0.00	0.00	0.30	0.40	0.03	0.30	0.00	0.00	0.30
mrXYRectangle::boundingBox	0.30	0.30	0.00	0.40	0.03	0.30	0.00	0.00	0.30	0.50	0.13
mrInstance::viewingHit	0.30	0.20	0.03	0.00	0.30	0.60	0.30	0.20	0.03	0.00	0.30
mrYZRectangle::shadowHit	0.30	0.30	0.00	0.00	0.30	0.10	0.13	0.30	0.00	0.50	0.13
mrMaterial::selectVisiblePoint	0.30	0.20	0.03	0.70	0.53	0.20	0.03	0.10	0.13	0.00	0.30
mrDiffuseAreaXZRectangleLuminaire::selectVisiblePoint	0.20	0.30	0.05	0.40	0.20	0.20	0.00	0.10	0.05	0.00	0.20
operator(constggHAffineMatrix3&,&constggPoint3&)	0.20	0.20	0.00	0.00	0.20	0.30	0.05	0.10	0.05	0.50	0.45
mrBox::viewingHit	0.20	0.20	0.00	0.00	0.20	0.20	0.00	0.20	0.00	0.00	0.20
mrXYRectangle::shadowHit	0.10	0.10	0.00	0.70	3.60	0.20	0.10	0.10	0.00	0.50	1.60
ggJitterSample1::Generate(void)	0.10	0.10	0.00	0.40	0.90	0.30	0.40	0.00	0.10	0.00	0.10
ggTrain<double>::Append(double)	0.10	0.10	0.00	0.00	0.10	0.10	0.00	0.10	0.00	0.00	0.10
ggAverage	0.10	0.10	0.00	0.40	0.90	0.30	0.40	0.00	0.10	0.00	0.10
mrBox::getParameters	0.10	0.00	0.10	0.00	0.10	0.00	0.10	0.00	0.10	0.00	0.10
Sum	99.40	99.60	1.02	97.10	24.73	98.90	5.47	99.00	5.71	95.20	25.13
	Ref	Train	Train	Test	Test	LgRed	LgRed	MdRed	MdRed	SmRed	SmRed
			Chi		Chi		Chi		Chi		Chi

90% Confidence level (60 entries) = 73.279



## Function level execution profile at optimization level O2

The following table contains function execution profiles and goodness-of-fit chi-squared statistic values for the train.rushmeier, test.rushmeier, lgred.rushmeier, mdred.rushmeier, and smred.rushmeier datasets as compared to the full SPEC reference datasets. This data was gathered with the hiprof profiling utility. \*90% Conf = Critical value of the chi-squared statistic at the 90 percent confidence level. Numbers in the Ref.rushmeier, Train.rushmeier, Test.rushmeier, Lgred.rushmeier, MdRed.rushmeier, and SmRed.rushmeier columns are the percent of overall execution time spent in the stated function (in the Function column). Numbers in the Train.rushmeier Chi, Test.rushmeier Chi, LgRed.rushmeier Chi, MdRed.rushmeier Chi, and SmRed.rushmeier Chi are the terms of the chi-squared statistic for the stated function (in the function column).

Function	Ref	Train	Train Chi	Test	Test Chi	LgRed	LgRed Chi	MdRed	MdRed Chi	SmRed	SmRed Chi
ggSpectrum::Set(float)	8.80	8.70	0.00	7.70	0.14	8.70	0.00	7.80	0.11	10.00	0.16
proc_at_0x1200ef0b8	8.00	7.40	0.04	11.20	1.28	8.20	0.00	8.00	0.00	10.60	0.85
mrSurfaceList::viewingHit	7.10	7.40	0.01	8.80	0.41	7.10	0.00	6.60	0.04	7.60	0.04
proc_at_0x1200eea58	5.40	4.80	0.07	3.90	0.42	5.40	0.00	5.20	0.01	4.70	0.09
mrSurfaceList::shadowHit	4.60	4.40	0.01	5.60	0.22	6.30	0.63	3.40	0.31	5.90	0.37
mrGrid::viewingHit	3.70	3.60	0.00	2.10	0.69	3.40	0.02	2.50	0.39	2.40	0.46
operator(constggSpectrum&,constggSpectrum&)	3.40	3.60	0.01	0.00	3.40	3.90	0.07	3.00	0.05	4.70	0.50
ggSpectrum::operator=(constggSpectrum&)	3.30	3.20	0.00	2.80	0.08	3.30	0.00	3.60	0.03	2.90	0.05
mrRushmeierPixelRenderer::rushmeierRadiance	2.80	2.90	0.00	1.80	0.36	3.30	0.09	3.70	0.29	5.30	2.23
mrMaterial::viewingHit	2.80	3.30	0.09	3.90	0.43	2.10	0.18	2.20	0.13	1.20	0.91
mrMaterial::shadowHit	2.80	2.30	0.09	3.90	0.43	2.50	0.03	2.20	0.13	4.10	0.60
sqrt	2.60	2.40	0.02	2.80	0.02	2.50	0.00	2.50	0.00	1.20	0.75
ggRayXZRectangleIntersect	2.50	2.30	0.02	2.10	0.06	2.40	0.00	2.80	0.04	1.80	0.20
operator(constggHRigidBodyMatrix3&,constggRay3&)	2.40	2.40	0.00	0.70	1.20	1.90	0.10	2.50	0.00	1.80	0.15
mrGrid::shadowHit	2.10	2.00	0.00	1.40	0.23	2.00	0.00	2.80	0.23	2.40	0.04
my_rand(void)	2.00	2.40	0.08	1.40	0.18	2.10	0.01	2.20	0.02	1.80	0.02
mrrushmeierPixelRenderer::directLight	1.80	1.80	0.00	2.80	0.56	2.40	0.20	1.50	0.05	1.80	0.00
mrInstance::shadowHit	1.80	1.90	0.01	1.80	0.00	1.30	0.14	2.20	0.09	2.40	0.20
mrMaterial::boundingBox	1.80	1.40	0.09	1.10	0.27	1.50	0.05	1.10	0.27	1.20	0.20
mrXZRectangle::shadowHit	1.80	1.80	0.00	1.40	0.09	1.70	0.01	1.80	0.00	0.00	1.80
ggRayBoxIntersect	1.80	1.90	0.01	1.80	0.00	2.20	0.09	1.10	0.27	1.80	0.00
mrRushmeierPixelRenderer::samplePixel	1.70	1.70	0.00	2.80	0.71	1.80	0.01	2.30	0.21	0.60	0.71
ggDiffuseMaterial::getInfo	1.60	1.90	0.06	0.00	1.60	1.50	0.01	1.40	0.03	1.20	0.10
operator(float,constggSpectrum&)	1.50	1.50	0.00	0.40	0.81	1.00	0.17	1.60	0.01	0.60	0.54
mrXZRectangle::viewingHit	1.40	1.40	0.00	1.80	0.11	0.70	0.35	2.50	0.86	1.80	0.11
sincos	1.40	1.50	0.01	0.40	0.71	1.20	0.03	1.50	0.01	1.20	0.03
operator(constggHRigidBodyMatrix3&,constggPoint3&)	1.30	1.30	0.00	0.70	0.28	1.20	0.01	1.30	0.00	0.60	0.38
operator(constggHRigidBodyMatrix3&,constggVector3&)	1.30	1.30	0.00	1.40	0.01	1.70	0.12	2.30	0.77	0.00	1.30
mrYZRectangle::viewingHit	1.20	1.40	0.03	1.40	0.03	1.10	0.01	1.30	0.01	0.60	0.30
proc_at_0x1200ee838	1.20	1.10	0.01	1.80	0.30	1.30	0.01	1.10	0.01	0.60	0.30
ggJitterSample2::Generate(void)	1.00	1.00	0.00	2.50	2.25	1.10	0.01	1.10	0.01	0.60	0.16
ggRayYZRectangleIntersect	1.00	1.00	0.00	1.10	0.01	0.80	0.04	1.30	0.09	1.20	0.04
mrDiffuseAreaXZRectangleLuminaire::shadowHit	0.90	1.10	0.04	1.10	0.04	0.80	0.01	0.70	0.04	0.60	0.10
mrInstance::boundingBox	0.80	0.90	0.01	0.40	0.20	0.80	0.00	0.80	0.00	0.00	0.80
mrInstance::selectVisiblePoint	0.80	0.90	0.01	1.10	0.11	1.10	0.11	0.30	0.31	1.20	0.20
ggSpectrum::operator+=(constggSpectrum&)	0.80	0.90	0.01	0.00	0.80	0.90	0.01	1.00	0.05	1.20	0.20

ggPinholeCamera::getRay	0.60	0.80	0.07	0.70	0.02	0.60	0.00	1.00	0.27	0.00	0.60
mrBox::shadowHit	0.60	0.50	0.02	0.70	0.02	0.30	0.15	0.60	0.00	0.60	0.00
ggTrain<ggPoint2>::Append(ggPoint2)	0.60	0.50	0.02	0.70	0.02	0.50	0.02	1.10	0.42	0.00	0.60
mrXZRectangle::boundingBox	0.60	0.40	0.07	0.00	0.60	0.40	0.07	0.60	0.00	1.20	0.60
ggDiffuseVector	0.50	0.50	0.00	1.10	0.72	0.70	0.08	0.60	0.02	0.00	0.50
mrBox::viewingHit	0.40	0.40	0.00	0.40	0.00	0.60	0.10	0.30	0.03	0.00	0.40
ggTrain<ggSpectrum>::Append(ggSpectrum)	0.40	0.50	0.02	0.00	0.40	0.20	0.10	0.20	0.10	0.00	0.40
mrDiffuseAreaXZRectangleLuminaire::selectVisiblePoint	0.40	0.40	0.00	0.00	0.40	0.70	0.23	0.30	0.03	0.00	0.40
mrXYRectangle::viewingHit	0.40	0.30	0.03	0.00	0.40	0.30	0.03	0.70	0.23	0.00	0.40
mrMaterial::selectVisiblePoint	0.40	0.40	0.00	0.70	0.23	0.30	0.03	0.50	0.02	0.00	0.40
ggRayXYRectangleIntersect	0.30	0.30	0.00	0.00	0.30	0.60	0.30	0.20	0.03	0.60	0.30
mrYZRectangle::boundingBox	0.30	0.20	0.03	0.70	0.53	0.40	0.03	0.20	0.03	0.60	0.30
mrYZRectangle::shadowHit	0.30	0.40	0.03	0.00	0.30	0.20	0.03	0.10	0.13	1.20	2.70
ggDiffuseBRDF::averageValue(void)	0.30	0.40	0.03	0.40	0.03	0.30	0.00	0.50	0.13	0.00	0.30
ggDiffuseBRDF::value	0.30	0.40	0.03	0.00	0.30	0.30	0.00	0.10	0.13	0.00	0.30
mrInstance::viewingHit	0.30	0.40	0.03	0.00	0.30	0.30	0.00	0.20	0.03	0.00	0.30
mrXYRectangle::boundingBox	0.30	0.20	0.03	0.00	0.30	0.40	0.03	0.20	0.03	0.00	0.30
mrXYRectangle::shadowHit	0.20	0.10	0.05	0.00	0.20	0.20	0.00	0.30	0.05	0.00	0.20
ggJitterSample1::Generate(void)	0.10	0.20	0.10	0.00	0.10	0.20	0.10	0.20	0.10	1.20	12.10
ggTrain<double>::Append(double)	0.10	0.20	0.10	1.40	16.90	0.20	0.10	0.00	0.10	0.00	0.10
ggAverage	0.10	0.10	0.00	0.00	0.10	0.00	0.10	0.10	0.00	0.00	0.10
mrBox::getParameters	0.10	0.10	0.00	0.00	0.10	0.00	0.10	0.10	0.00	0.00	0.10
operator(constggHRigidBodyMatrix3&&,constggONB3&&)	0.10	0.00	0.10	0.00	0.10	0.10	0.00	0.10	0.00	0.00	0.10
Sum	98.90	98.50	1.50	92.70	40.80	99.00	4.11	97.40	6.75	93.00	36.39
	Ref	Train	Train	Test	Test	LgRed	LgRed	MdRed	MdRed	SmRed	SmRed
			Chi		Chi		Chi		Chi		Chi

90% Confidence level (59 entries) = 72.160

### Function level execution profile at optimization level O3

The following table contains function execution profiles and goodness-of-fit chi-squared statistic values for the train.rushmeier, test.rushmeier, lgred.rushmeier, mdred.rushmeier, and smred.rushmeier datasets as compared to the full SPEC reference datasets. This data was gathered with the hiprof profiling utility. \*90% Conf = Critical value of the chi-squared statistic at the 90 percent confidence level. Numbers in the Ref.rushmeier, Train.rushmeier, Test.rushmeier, Lgred.rushmeier, MdRed.rushmeier, and SmRed.rushmeier columns are the percent of overall execution time spent in the stated function (in the Function column). Numbers in the Train.rushmeier Chi, Test.rushmeier Chi, LgRed.rushmeier Chi, MdRed.rushmeier Chi, and SmRed.rushmeier Chi are the terms of the chi-squared statistic for the stated function (in the function column).

Function	Ref	Train	Train Chi	Test	Test Chi	LgRed	LgRed Chi	MdRed	MdRed Chi	SmRed	SmRed Chi
ggSpectrum::Set(float)	8.80	8.70	0.00	7.80	0.11	7.30	0.26	10.10	0.19	4.90	1.73
proc_at_0x1200ef0b8	8.20	7.90	0.01	6.10	0.54	8.10	0.00	7.70	0.03	8.80	0.04
mrSurfaceList::viewingHit	7.00	7.40	0.02	8.50	0.32	7.30	0.01	8.50	0.32	7.10	0.00
proc_at_0x1200eea58	5.20	5.20	0.00	6.80	0.49	5.50	0.02	5.10	0.00	7.10	0.69
mrSurfaceList::shadowHit	4.70	4.10	0.08	6.80	0.94	4.30	0.03	3.80	0.17	5.50	0.14
mrGrid::viewingHit	3.70	3.70	0.00	3.70	0.00	3.20	0.07	3.90	0.01	2.20	0.61
ggSpectrum::operator=(constggSpectrum&)	3.40	3.50	0.00	3.70	0.03	3.30	0.00	1.10	1.56	1.10	1.56
operator(constggSpectrum&,constggSpectrum&)	3.40	3.40	0.00	2.00	0.58	3.50	0.00	2.90	0.07	1.60	0.95
mrRushmeierPixelRenderer::rushmeierRadiance	3.00	2.90	0.00	2.40	0.12	2.60	0.05	2.30	0.16	3.30	0.03
mrMaterial::viewingHit	2.80	3.10	0.03	2.40	0.06	2.80	0.00	3.00	0.01	1.60	0.51
mrMaterial::shadowHit	2.80	2.60	0.01	4.40	0.91	2.70	0.00	2.40	0.06	2.70	0.00
sqrt	2.60	2.60	0.00	2.70	0.00	2.70	0.00	2.30	0.03	1.10	0.87
ggRayXZRectangleIntersect	2.40	2.50	0.00	1.70	0.20	3.40	0.42	1.30	0.50	3.80	0.82
operator(constggHRigidBodyMatrix3&,constggRay3&)	2.30	2.40	0.00	2.70	0.07	1.90	0.07	3.10	0.28	3.30	0.43
mrGrid::shadowHit	2.10	1.90	0.02	1.40	0.23	1.90	0.02	1.40	0.23	2.20	0.00
my_rand(void)	2.00	2.20	0.02	1.40	0.18	1.60	0.08	2.30	0.04	2.20	0.02
mrRushmeierPixelRenderer::directLight	1.90	1.80	0.01	1.40	0.13	1.90	0.00	1.80	0.01	4.40	3.29
mrMaterial::boundingBox	1.80	1.90	0.01	1.40	0.09	2.00	0.02	1.80	0.00	0.50	0.94
mrXZRectangle::shadowHit	1.80	1.70	0.01	1.40	0.09	2.10	0.05	1.60	0.02	3.80	2.22
mrInstance::shadowHit	1.80	1.90	0.01	1.70	0.01	2.20	0.09	2.10	0.05	2.20	0.09
ggRayBoxIntersect	1.70	1.60	0.01	0.70	0.59	2.20	0.15	2.60	0.48	1.60	0.01
mrRushmeierPixelRenderer::samplePixel	1.70	1.60	0.01	1.40	0.05	2.30	0.21	1.70	0.00	3.30	1.51
ggDiffuseMaterial::getInfo	1.60	1.20	0.10	1.70	0.01	1.60	0.00	2.40	0.40	0.00	1.60
operator(float,constggSpectrum&)	1.50	1.90	0.11	1.70	0.03	1.70	0.03	1.30	0.03	3.30	2.16
mrXZRectangle::viewingHit	1.40	1.40	0.00	1.40	0.00	1.60	0.03	2.30	0.58	0.00	1.40
operator(constggHRigidBodyMatrix3&,constggVector3&)	1.40	1.30	0.01	1.40	0.00	1.40	0.00	0.90	0.18	2.70	1.21
sincos	1.40	1.50	0.01	1.70	0.06	1.10	0.06	1.70	0.06	0.00	1.40
operator(constggHRigidBodyMatrix3&,constggPoint3&)	1.30	1.30	0.00	2.00	0.38	1.30	0.00	1.10	0.03	1.10	0.03
mrYZRectangle::viewingHit	1.20	1.10	0.01	1.70	0.21	0.90	0.07	1.10	0.01	1.10	0.01
proc_at_0x1200ee838	1.20	1.50	0.08	1.40	0.03	1.30	0.01	1.80	0.30	0.50	0.41
ggRayYZRectangleIntersect	1.10	1.00	0.01	1.00	0.01	0.70	0.15	0.70	0.15	2.20	1.10
ggJitterSample2::Generate(void)	1.00	0.80	0.04	2.00	1.00	1.00	0.00	0.80	0.04	1.60	0.36
mrDiffuseAreaXZRectangleLuminaire::shadowHit	0.90	0.80	0.01	0.30	0.40	0.90	0.00	1.10	0.04	0.50	0.18
mrInstance::boundingBox	0.80	1.00	0.05	1.00	0.05	1.00	0.05	1.40	0.45	1.10	0.11
mrInstance::selectVisiblePoint	0.80	0.80	0.00	0.30	0.31	0.90	0.01	0.30	0.31	0.50	0.11

ggSpectrum::operator+=(constggSpectrum&)	0.80	0.90	0.01	1.00	0.05	0.50	0.11	1.40	0.45	0.50	0.11
ggTrain<ggPoint2>::Append(ggPoint2)	0.60	0.50	0.02	0.30	0.15	0.50	0.02	0.70	0.02	0.00	0.60
mrBox::shadowHit	0.60	0.50	0.02	0.00	0.60	0.70	0.02	0.20	0.27	0.00	0.60
ggPinholeCamera::getRay	0.60	0.70	0.02	0.30	0.15	0.60	0.00	0.30	0.15	1.60	1.67
mrXZRectangle::boundingBox	0.50	0.70	0.08	0.00	0.50	0.50	0.00	0.60	0.02	0.50	0.00
ggDiffuseVector	0.50	0.40	0.02	0.00	0.50	0.60	0.02	0.50	0.00	0.50	0.00
operator(constggHAffineMatrix3&,constggPoint3&)	0.40	0.50	0.02	0.30	0.03	0.50	0.02	0.70	0.23	0.00	0.40
ggTrain<ggSpectrum>::Append(ggSpectrum)	0.40	0.60	0.10	0.00	0.40	0.40	0.00	0.20	0.10	0.50	0.02
mrBox::viewingHit	0.40	0.40	0.00	0.30	0.03	0.30	0.03	0.50	0.02	0.00	0.40
mrMaterial::selectVisiblePoint	0.40	0.50	0.02	0.70	0.23	0.40	0.00	0.50	0.02	0.50	0.02
mrDiffuseAreaXZRectangleLuminaire::selectVisiblePoint	0.40	0.30	0.03	0.00	0.40	0.20	0.10	0.30	0.03	0.00	0.40
mrXYRectangle::viewingHit	0.40	0.50	0.02	0.70	0.23	0.60	0.10	0.20	0.10	0.00	0.40
ggRayXYRectangleIntersect	0.40	0.30	0.03	0.30	0.03	0.30	0.03	0.50	0.02	0.00	0.40
mrYZRectangle::boundingBox	0.30	0.40	0.03	0.00	0.30	0.40	0.03	0.20	0.03	0.50	0.13
ggDiffuseBRDF::value	0.30	0.40	0.03	0.30	0.00	0.50	0.13	0.30	0.00	0.50	0.13
ggDiffuseBRDF::averageValue(void)	0.30	0.30	0.00	0.00	0.30	0.30	0.00	0.30	0.00	0.00	0.30
mrInstance::viewingHit	0.30	0.30	0.00	0.30	0.00	0.50	0.13	0.20	0.03	0.00	0.30
mrXYRectangle::boundingBox	0.30	0.10	0.13	0.30	0.00	0.30	0.00	0.20	0.03	0.00	0.30
mrYZRectangle::shadowHit	0.30	0.20	0.03	0.00	0.30	0.30	0.00	0.20	0.03	0.00	0.30
mrXYRectangle::shadowHit	0.20	0.20	0.00	0.00	0.20	0.10	0.05	0.20	0.00	0.00	0.20
ggJitterSample1::Generate(void)	0.20	0.20	0.00	0.30	0.05	0.30	0.05	0.10	0.05	0.00	0.20
ggTrain<double>::Append(double)	0.10	0.20	0.10	0.30	0.40	0.20	0.10	0.00	0.10	0.00	0.10
ggAverage	0.10	0.20	0.10	0.00	0.10	0.10	0.00	0.20	0.10	0.00	0.10
mrBox::getParameters	0.10	0.00	0.10	0.00	0.10	0.10	0.00	0.00	0.10	0.50	1.60
operator(constggHRigidBodyMatrix3&,constggONB3&)	0.10	0.00	0.10	0.30	0.40	0.10	0.00	0.00	0.10	0.00	0.10
Sum	99.70	99.50	1.68	95.80	13.66	99.50	2.91	98.20	8.83	94.50	35.33
	Ref	Train	Train	Test	Test	LgRed	LgRed	MdRed	MdRed	SmRed	SmRed
			Chi		Chi		Chi		Chi		Chi

90% Confidence level (60 entries) = 73.279

## Function level execution profile at optimization level O4

The following table contains function execution profiles and goodness-of-fit chi-squared statistic values for the train.rushmeier, test.rushmeier, lgred.rushmeier, mdred.rushmeier, and smred.rushmeier datasets as compared to the full SPEC reference datasets. This data was gathered with the hiprof profiling utility. \*90% Conf = Critical value of the chi-squared statistic at the 90 percent confidence level. Numbers in the Ref.rushmeier, Train.rushmeier, Test.rushmeier, Lgred.rushmeier, MdRed.rushmeier, and SmRed.rushmeier columns are the percent of overall execution time spent in the stated function (in the Function column). Numbers in the Train.rushmeier Chi, Test.rushmeier Chi, LgRed.rushmeier Chi, MdRed.rushmeier Chi, and SmRed.rushmeier Chi are the terms of the chi-squared statistic for the stated function (in the function column).

Function	Ref	Train	Train Chi	Test	Test Chi	LgRed	LgRed Chi	MdRed	MdRed Chi	SmRed	SmRed Chi
proc_at_0x1200f1c10	7.50	7.30	0.01	9.40	0.48	6.90	0.05	7.60	0.00	5.20	0.71
mrSurfaceList::viewingHit	7.10	7.60	0.04	5.40	0.41	8.40	0.24	7.80	0.07	6.80	0.01
ggRayXZRectangleIntersect	7.00	6.70	0.01	8.40	0.28	6.80	0.01	7.10	0.00	6.20	0.09
proc_at_0x1200f14d0	6.80	6.70	0.00	7.40	0.05	7.10	0.01	6.30	0.04	6.20	0.05
ggSpectrum::Set(float)	6.60	6.80	0.01	5.70	0.12	5.70	0.12	6.20	0.02	2.60	2.42
mrXZRectangle::shadowHit	4.10	3.70	0.04	5.40	0.41	4.50	0.04	3.90	0.01	4.70	0.09
ggSpectrum::operator=(constggSpectrum&)	3.50	3.50	0.00	2.30	0.41	3.20	0.03	3.80	0.03	2.60	0.23
operator(constggSpectrum&,constggSpectrum&)	3.40	3.40	0.00	3.70	0.03	3.60	0.01	3.30	0.00	0.00	3.40
mrXZRectangle::viewingHit	3.00	2.80	0.01	4.00	0.33	2.90	0.00	2.10	0.27	2.10	0.27
mrGrid::viewingHit	2.90	2.40	0.09	3.00	0.00	2.50	0.06	3.40	0.09	2.10	0.22
sqrt	2.40	3.10	0.20	2.70	0.04	2.50	0.00	2.70	0.04	4.20	1.35
mrMaterial::viewingHit	2.30	2.40	0.00	2.30	0.00	2.40	0.00	2.10	0.02	2.60	0.04
mrRushmeierPixelRenderer::rushmeierRadiance	2.30	2.00	0.04	2.00	0.04	2.20	0.00	1.50	0.28	2.60	0.04
proc_at_0x1200f1280	2.20	2.00	0.02	1.30	0.37	2.10	0.00	2.70	0.11	4.20	1.82
mrMaterial::shadowHit	2.10	2.20	0.00	0.70	0.93	2.00	0.00	2.00	0.00	2.60	0.12
my_rand(void)	2.10	2.00	0.00	2.30	0.02	1.90	0.02	1.50	0.17	2.10	0.00
operator(float,constggSpectrum&)	1.90	1.90	0.00	1.70	0.02	1.60	0.05	1.90	0.00	2.10	0.02
mrSurfaceList::shadowHit	1.80	1.80	0.00	1.00	0.36	2.00	0.02	2.60	0.36	0.00	1.80
mrrushmeierPixelRenderer::directLight	1.80	1.70	0.01	2.70	0.45	1.40	0.09	1.50	0.05	1.00	0.36
mrMaterial::boundingBox	1.80	1.60	0.02	1.30	0.14	1.80	0.00	2.60	0.36	1.60	0.02
operator(constggHRigidBodyMatrix3&,constggPoint3&)	1.70	1.70	0.00	0.70	0.59	1.40	0.05	1.40	0.05	1.60	0.01
mrInstance::shadowHit	1.70	1.80	0.01	2.00	0.05	1.70	0.00	1.70	0.00	2.10	0.09
mrGrid::shadowHit	1.50	1.50	0.00	1.70	0.03	1.80	0.06	1.00	0.17	1.00	0.17
ggRayBoxIntersect	1.50	1.20	0.06	2.00	0.17	1.10	0.11	1.40	0.01	0.50	0.67
mrRushmeierPixelRenderer::samplePixel	1.50	1.50	0.00	1.70	0.03	1.80	0.06	1.40	0.01	3.10	1.71
ggDiffuseMaterial::getInfo	1.30	1.10	0.03	1.70	0.12	1.20	0.01	0.80	0.19	2.10	0.49
operator(constggHRigidBodyMatrix3&,constggPoint3&)	1.30	1.40	0.01	0.30	0.77	1.10	0.03	1.10	0.03	0.50	0.49
mrInstance::boundingBox	1.30	1.30	0.00	0.30	0.77	1.20	0.01	1.10	0.03	1.60	0.07
operator(constggHRigidBodyMatrix3&,constggVector3&)	1.30	1.20	0.01	1.00	0.07	1.60	0.07	0.60	0.38	1.00	0.07
sincos	1.20	1.10	0.01	2.30	1.01	1.10	0.01	1.10	0.01	0.00	1.20
ggRayYZRectangleIntersect	1.20	1.20	0.00	0.70	0.21	1.10	0.01	0.50	0.41	3.10	3.01
mrYZRectangle::viewingHit	1.20	1.20	0.00	0.00	1.20	1.40	0.03	1.40	0.03	1.00	0.03
ggJitterSample2::Generate(void)	0.90	1.00	0.01	0.70	0.04	0.90	0.00	1.10	0.04	0.50	0.18
mrInstance::selectVisiblePoint	0.80	0.70	0.01	0.30	0.31	0.60	0.05	0.50	0.11	0.50	0.11
ggPinholeCamera::getRay	0.80	1.00	0.05	1.30	0.31	0.80	0.00	1.40	0.45	0.00	0.80

ggTrain<ggSpectrum>::Append(ggSpectrum)	0.70	0.60	0.01	0.30	0.23	0.50	0.06	0.80	0.01	0.50	0.06
ggSpectrum::operator+=(constggSpectrum&)	0.60	0.70	0.02	0.30	0.15	1.00	0.27	0.60	0.00	0.50	0.02
ggTrain<ggPoint2>::Append(ggPoint2)	0.60	0.60	0.00	1.00	0.27	0.60	0.00	0.90	0.15	0.00	0.60
mrDiffuseAreaXZRectangleLuminaire::shadowHit	0.60	0.70	0.02	0.00	0.60	0.40	0.07	0.60	0.00	0.50	0.02
ggDiffuseVector	0.50	0.50	0.00	0.30	0.08	0.50	0.00	0.80	0.18	0.00	0.50
mrXZRectangle::boundingBox	0.50	0.50	0.00	0.30	0.08	0.50	0.00	0.90	0.32	0.50	0.00
mrBox::shadowHit	0.50	0.50	0.00	0.30	0.08	0.40	0.02	0.50	0.00	1.60	2.42
mrXYRectangle::viewingHit	0.50	0.60	0.02	0.30	0.08	0.60	0.02	0.40	0.02	0.50	0.00
ggRayXYRectangleIntersect	0.40	0.40	0.00	0.70	0.23	0.50	0.02	0.40	0.00	0.00	0.40
ggDiffuseBRDF::averageValue(void)	0.30	0.40	0.03	0.00	0.30	0.40	0.03	0.40	0.03	1.00	1.63
mrXYRectangle::boundingBox	0.30	0.30	0.00	0.00	0.30	0.40	0.03	0.00	0.30	0.50	0.13
mrYZRectangle::boundingBox	0.30	0.30	0.00	1.00	1.63	0.30	0.00	0.40	0.03	0.50	0.13
mrMaterial::selectVisiblePoint	0.30	0.20	0.03	0.00	0.30	0.20	0.03	0.50	0.13	1.00	1.63
mrYZRectangle::shadowHit	0.30	0.30	0.00	0.00	0.30	0.10	0.13	0.60	0.30	0.50	0.13
mrInstance::viewingHit	0.30	0.30	0.00	0.00	0.30	0.40	0.03	0.20	0.03	1.00	1.63
ggDiffuseBRDF::value	0.30	0.40	0.03	0.00	0.30	0.20	0.03	0.10	0.13	0.50	0.13
mrDiffuseAreaXZRectangleLuminaire::selectVisiblePoint	0.20	0.30	0.05	0.30	0.05	0.10	0.05	0.20	0.00	0.00	0.20
operator(constggHAffineMatrix3&,&constggPoint3&)	0.20	0.40	0.20	0.30	0.05	0.20	0.00	0.10	0.05	0.50	0.45
mrBox::viewingHit	0.20	0.10	0.05	0.00	0.20	0.10	0.05	0.20	0.00	1.00	3.20
mrXYRectangle::shadowHit	0.20	0.10	0.05	0.30	0.05	0.10	0.05	0.10	0.05	0.50	0.45
ggTrain<double>::Append(double)	0.10	0.20	0.10	0.30	0.40	0.10	0.00	0.30	0.40	0.00	0.10
ggJitterSample1::Generate(void)	0.10	0.10	0.00	0.00	0.10	0.20	0.10	0.00	0.10	0.00	0.10
ggAverage	0.10	0.20	0.10	0.30	0.40	0.10	0.00	0.10	0.00	0.00	0.10
Sum	99.90	99.20	1.41	95.40	17.05	98.20	2.26	98.20	6.08	91.20	36.20
	Ref	Train	Train	Test	Test	LgRed	LgRed	MdRed	MdRed	SmRed	SmRed
			Chi		Chi		Chi		Chi		Chi

90% Confidence level (58 entries) = 71.040

### Instruction Mix profile at optimization level o0

The following table contains instruction mix breakdown and goodness-of-fit chi-squared statistic values for the train.rushmeier, test.rushmeier, lgred.rushmeier, mdred.rushmeier, and smred.rushmeier datasets, as compared to the full SPEC dataset. This data was gathered with the sim-profile simulator for the SimpleScalar suite. \*90% Conf = Critical value of the chi-squared statistic at the 90 percent confidence level. Numbers in the Ref.rushmeier, Train.rushmeier, Test.rushmeier, LgRed.rushmeier, MdRed.rushmeier, and SmRed.rushmeier columns are the percent of overall instructions of the stated instruction type (in the Inst Type column). Numbers in the Train.rushmeier Chi, Test.rushmeier Chi, LgRed.rushmeier Chi, MdRed.rushmeier Chi, and SmRed.rushmeier Chi columns are the terms of the chi-squared statistic for the stated instruction type (in the Inst Type column).

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O0 Program

Inst Type

	Ref Rushmeier	Train Rushmeier	Train Rushmeier	Test Rushmeier	Test Rushmeier	LgRed Rushmeier	LgRed Rushmeier	MdRed Rushmeier	MdRed Rushmeier	SmRed Rushmeier	SmRed Rushmeier
			Chi		Chi		Chi		Chi		Chi
load	19.40	19.40	0.00	19.49	0.00	19.41	0.00	19.42	0.00	19.54	0.00
store	11.47	11.47	0.00	11.44	0.00	11.47	0.00	11.46	0.00	11.44	0.00
unconditional branch	16.63	16.62	0.00	16.49	0.00	16.61	0.00	16.58	0.00	16.42	0.00
conditional branch	4.78	4.78	0.00	4.81	0.00	4.78	0.00	4.80	0.00	4.81	0.00
int computation	42.66	42.66	0.00	42.60	0.00	42.65	0.00	42.65	0.00	42.55	0.00
fp computation	5.06	5.06	0.00	5.17	0.00	5.08	0.00	5.08	0.00	5.23	0.01
trap	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.02	0.00
Sum	100.00	99.99	0.00	100.01	0.00	100.00	0.00	99.99	0.00	100.01	0.01
	Ref Rushmeier	Train Rushmeier	Train Rushmeier	Test Rushmeier	Test Rushmeier	LgRed Rushmeier	LgRed Rushmeier	MdRed Rushmeier	MdRed Rushmeier	SmRed Rushmeier	SmRed Rushmeier
			Chi		Chi		Chi		Chi		Chi

90% Confidence level (7 entries) = 10.645

252.eon, rushmeier command line

### Instruction Mix profile at optimization level o1

The following table contains instruction mix breakdown and goodness-of-fit chi-squared statistic values for the train.rushmeier, test.rushmeier, lgred.rushmeier, mdred.rushmeier, and smred.rushmeier datasets, as compared to the full SPEC dataset. This data was gathered with the sim-profile simulator for the SimpleScalar suite. \*90% Conf = Critical value of the chi-squared statistic at the 90 percent confidence level. Numbers in the Ref.rushmeier, Train.rushmeier, Test.rushmeier, LgRed.rushmeier, MdRed.rushmeier, and SmRed.rushmeier columns are the percent of overall instructions of the stated instruction type (in the Inst Type column). Numbers in the Train.rushmeier Chi, Test.rushmeier Chi, LgRed.rushmeier Chi, MdRed.rushmeier Chi, and SmRed.rushmeier Chi columns are the terms of the chi-squared statistic for the stated instruction type (in the Inst Type column).

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O1 Program

Inst Type	Ref	Train	Train	Test	Test	LgRed	LgRed	MdRed	MdRed	SmRed	SmRed
	Rushmeier	Rushmeier	Rushmeier	Rushmeier	Rushmeier	Rushmeier	Rushmeier	Rushmeier	Rushmeier	Rushmeier	Rushmeier
			Chi		Chi		Chi		Chi		Chi
load	27.58	27.58	0.00	27.54	0.00	27.58	0.00	27.55	0.00	27.54	0.00
store	17.15	17.13	0.00	16.94	0.00	17.11	0.00	17.09	0.00	16.81	0.01
unconditional branch	3.55	3.55	0.00	3.54	0.00	3.55	0.00	3.55	0.00	3.53	0.00
conditional branch	8.68	8.67	0.00	8.65	0.00	8.67	0.00	8.67	0.00	8.64	0.00
int computation	34.10	34.11	0.00	34.16	0.00	34.11	0.00	34.14	0.00	34.19	0.00
fp computation	8.95	8.96	0.00	9.15	0.00	8.98	0.00	8.99	0.00	9.25	0.01
trap	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.01	0.00	0.03	0.00
Sum	100.01	100.00	0.00	100.00	0.01	100.00	0.00	100.00	0.00	99.99	0.02
	Ref	Train	Train	Test	Test	LgRed	LgRed	MdRed	MdRed	SmRed	SmRed
	Rushmeier	Rushmeier	Rushmeier	Rushmeier	Rushmeier	Rushmeier	Rushmeier	Rushmeier	Rushmeier	Rushmeier	Rushmeier
			Chi		Chi		Chi		Chi		Chi

90% Confidence level (7 entries) = 10.645

252.eon, rushmeier command line



### **Instruction Mix profile at optimization level o2**

The following table contains instruction mix breakdown and goodness-of-fit chi-squared statistic values for the train.rushmeier, test.rushmeier, lgred.rushmeier, mdred.rushmeier, and smred.rushmeier datasets, as compared to the full SPEC dataset. This data was gathered with the sim-profile simulator for the SimpleScalar suite. \*90% Conf = Critical value of the chi-squared statistic at the 90 percent confidence level. Numbers in the Ref.rushmeier, Train.rushmeier, Test.rushmeier, LgRed.rushmeier, MdRed.rushmeier, and SmRed.rushmeier columns are the percent of overall instructions of the stated instruction type (in the Inst Type column). Numbers in the Train.rushmeier Chi, Test.rushmeier Chi, LgRed.rushmeier Chi, MdRed.rushmeier Chi, and SmRed.rushmeier Chi columns are the terms of the chi-squared statistic for the stated instruction type (in the Inst Type column).

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O2 Program

Inst Type	Ref	Train	Train	Test	Test	LgRed	LgRed	MdRed	MdRed	SmRed	SmRed
	Rushmeier	Rushmeier	Rushmeier	Rushmeier	Rushmeier	Rushmeier	Rushmeier	Rushmeier	Rushmeier	Rushmeier	Rushmeier
			Chi		Chi		Chi		Chi		Chi
load	31.90	31.89	0.00	31.78	0.00	31.88	0.00	31.85	0.00	31.74	0.00
store	21.02	21.00	0.00	20.67	0.01	20.96	0.00	20.94	0.00	20.46	0.01
unconditional branch	4.14	4.14	0.00	4.12	0.00	4.13	0.00	4.14	0.00	4.09	0.00
conditional branch	5.85	5.85	0.00	5.87	0.00	5.85	0.00	5.85	0.00	5.90	0.00
int computation	26.29	26.30	0.00	26.52	0.00	26.34	0.00	26.37	0.00	26.67	0.01
fp computation	10.80	10.81	0.00	11.00	0.00	10.83	0.00	10.85	0.00	11.09	0.01
trap	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.01	0.00	0.04	0.00
Sum	100.00	99.99	0.00	99.99	0.01	99.99	0.00	100.01	0.00	99.99	0.03
	Ref	Train	Train	Test	Test	LgRed	LgRed	MdRed	MdRed	SmRed	SmRed
	Rushmeier	Rushmeier	Rushmeier	Rushmeier	Rushmeier	Rushmeier	Rushmeier	Rushmeier	Rushmeier	Rushmeier	Rushmeier
			Chi		Chi		Chi		Chi		Chi

90% Confidence level (7 entries) = 10.645

252.eon, rushmeier command line

### **Instruction Mix profile at optimization level o3**

The following table contains instruction mix breakdown and goodness-of-fit chi-squared statistic values for the train.rushmeier, test.rushmeier, lgred.rushmeier, mdred.rushmeier, and smred.rushmeier datasets, as compared to the full SPEC dataset. This data was gathered with the sim-profile simulator for the SimpleScalar suite. \*90% Conf = Critical value of the chi-squared statistic at the 90 percent confidence level. Numbers in the Ref.rushmeier, Train.rushmeier, Test.rushmeier, LgRed.rushmeier, MdRed.rushmeier, and SmRed.rushmeier columns are the percent of overall instructions of the stated instruction type (in the Inst Type column). Numbers in the Train.rushmeier Chi, Test.rushmeier Chi, LgRed.rushmeier Chi, MdRed.rushmeier Chi, and SmRed.rushmeier Chi columns are the terms of the chi-squared statistic for the stated instruction type (in the Inst Type column).

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O3 Program

Inst Type	Ref Rushmeier	Train Rushmeier	Train Rushmeier	Test Rushmeier	Test Rushmeier	LgRed Rushmeier	LgRed Rushmeier	MdRed Rushmeier	MdRed Rushmeier	SmRed Rushmeier	SmRed Rushmeier
			Chi		Chi		Chi		Chi		Chi
load	31.90	31.89	0.00	31.78	0.00	31.88	0.00	31.85	0.00	31.74	0.00
store	21.02	21.00	0.00	20.67	0.01	20.96	0.00	20.94	0.00	20.46	0.01
unconditional branch	4.14	4.14	0.00	4.12	0.00	4.13	0.00	4.14	0.00	4.09	0.00
conditional branch	5.85	5.85	0.00	5.87	0.00	5.85	0.00	5.85	0.00	5.90	0.00
int computation	26.29	26.30	0.00	26.52	0.00	26.34	0.00	26.37	0.00	26.67	0.01
fp computation	10.80	10.81	0.00	11.00	0.00	10.83	0.00	10.85	0.00	11.09	0.01
trap	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.01	0.00	0.04	0.00
Sum	100.00	99.99	0.00	99.99	0.01	99.99	0.00	100.01	0.00	99.99	0.03
	Ref Rushmeier	Train Rushmeier	Train Rushmeier	Test Rushmeier	Test Rushmeier	LgRed Rushmeier	LgRed Rushmeier	MdRed Rushmeier	MdRed Rushmeier	SmRed Rushmeier	SmRed Rushmeier
			Chi		Chi		Chi		Chi		Chi

90% Confidence level (7 entries) = 10.645

252.eon, rushmeier command line

### Instruction Mix profile at optimization level o4

The following table contains instruction mix breakdown and goodness-of-fit chi-squared statistic values for the train.rushmeier, test.rushmeier, lgred.rushmeier, mdred.rushmeier, and smred.rushmeier datasets, as compared to the full SPEC dataset. This data was gathered with the sim-profile simulator for the SimpleScalar suite. \*90% Conf = Critical value of the chi-squared statistic at the 90 percent confidence level. Numbers in the Ref.rushmeier, Train.rushmeier, Test.rushmeier, LgRed.rushmeier, MdRed.rushmeier, and SmRed.rushmeier columns are the percent of overall instructions of the stated instruction type (in the Inst Type column). Numbers in the Train.rushmeier Chi, Test.rushmeier Chi, LgRed.rushmeier Chi, MdRed.rushmeier Chi, and SmRed.rushmeier Chi columns are the terms of the chi-squared statistic for the stated instruction type (in the Inst Type column).

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O4 Program

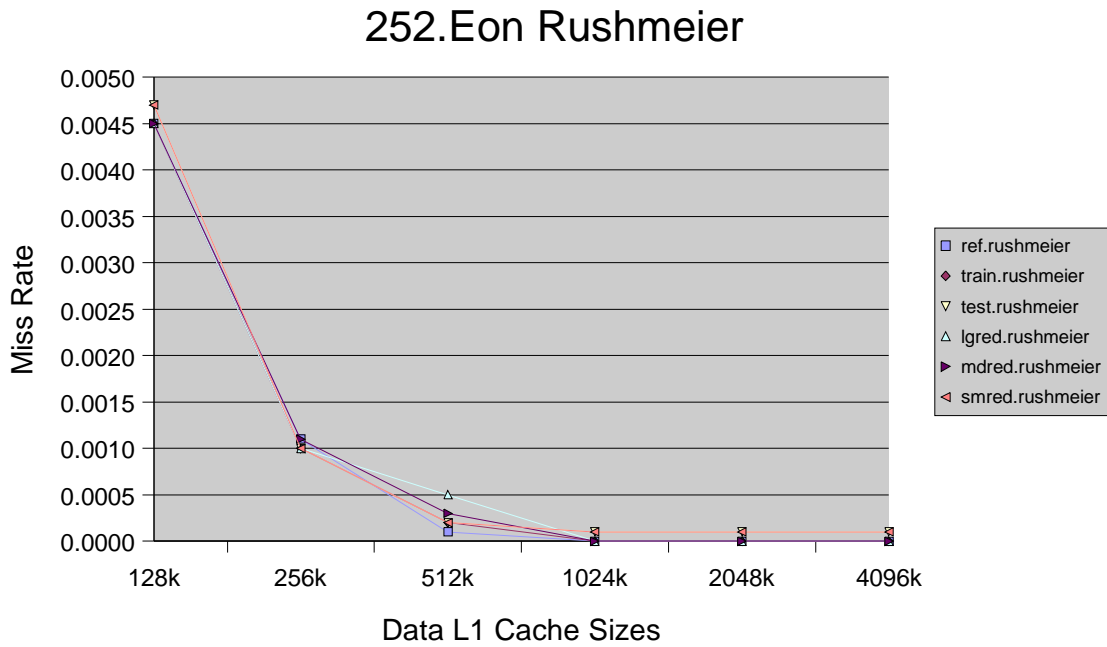
Inst Type	Ref	Train	Train	Test	Test	LgRed	LgRed	MdRed	MdRed	SmRed	SmRed
	Rushmeier	Rushmeier	Rushmeier	Rushmeier	Rushmeier	Rushmeier	Rushmeier	Rushmeier	Rushmeier	Rushmeier	Rushmeier
			Chi		Chi		Chi		Chi		Chi
load	31.85	31.84	0.00	31.76	0.00	31.84	0.00	31.81	0.00	31.72	0.00
store	23.00	22.98	0.00	22.60	0.01	22.93	0.00	22.90	0.00	22.37	0.02
unconditional branch	3.98	3.98	0.00	3.97	0.00	3.98	0.00	3.98	0.00	3.94	0.00
conditional branch	5.69	5.69	0.00	5.71	0.00	5.69	0.00	5.69	0.00	5.74	0.00
int computation	25.49	25.51	0.00	25.73	0.00	25.54	0.00	25.57	0.00	25.88	0.01
fp computation	10.00	10.01	0.00	10.21	0.00	10.03	0.00	10.04	0.00	10.30	0.01
trap	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.01	0.00	0.04	0.00
Sum	100.01	100.01	0.00	100.01	0.01	100.01	0.00	100.00	0.00	99.99	0.03
	Ref	Train	Train	Test	Test	LgRed	LgRed	MdRed	MdRed	SmRed	SmRed
	Rushmeier	Rushmeier	Rushmeier	Rushmeier	Rushmeier	Rushmeier	Rushmeier	Rushmeier	Rushmeier	Rushmeier	Rushmeier
			Chi		Chi		Chi		Chi		Chi

90% Confidence level (7 entries) = 10.645

252.eon, rushmeier command line

## Cache profile

The following chart shows level 1 data cache miss rates for the Ref.rushmeier, Train.rushmeier, Test.rushmeier, LgRed.rushmeier, MdRed.rushmeier, and SmRed.rushmeier datasets. This data was gathered with the sim-cache simulator from the SimpleScalar suite. Miss rate is stated as the ratio of level 1 misses to total level 1 accesses.



252.eon, rushmeier command line

### ***Instruction Counts for all Datasets***

The following table shows the instruction counts and estimated simulation time for the ref.rushmeier, train.rushmeier, test.rushmeier, lgred.rushmeier, mdred.rushmeier, and smred.rushmeier datasets. Instruction counts are from the simulated benchmark, compiled at optimization level O0 and run with each input dataset. Estimated simulation times are calculated using a 45,000 instructions per second factor. This factor was determined by observing the simulation rate of a simulator similar to sim-outorder, run on a machine similar to the SPEC 2000 reference machine (a 333 Mhz Sparc).

	<u>Ref</u>	<u>Train</u>	<u>Test</u>	<u>LgRed</u>	<u>MdRed</u>	<u>SmRed</u>
	<u>Rushmeier</u>	<u>Rushmeier</u>	<u>Rushmeier</u>	<u>Rushmeier</u>	<u>Rushmeier</u>	<u>Rushmeier</u>
Instruction Count						
(in millions)	194240	8861	441	3125	1446	290
Simulation Time						
(in hours)	1199.0	54.7	2.7	19.3	8.9	1.8