# Russia 2013

Looking at the annual ping packet losses measured from SLAC to Russia (see figure below) there is almost a factor of 10 increase in % ping losses from 2012 to 2013. This increase is also seen in the annual jitter (see below) and throughput. The throughput behavior follows directly from the loss since the throughput is derived from the inverse square root of the loss.
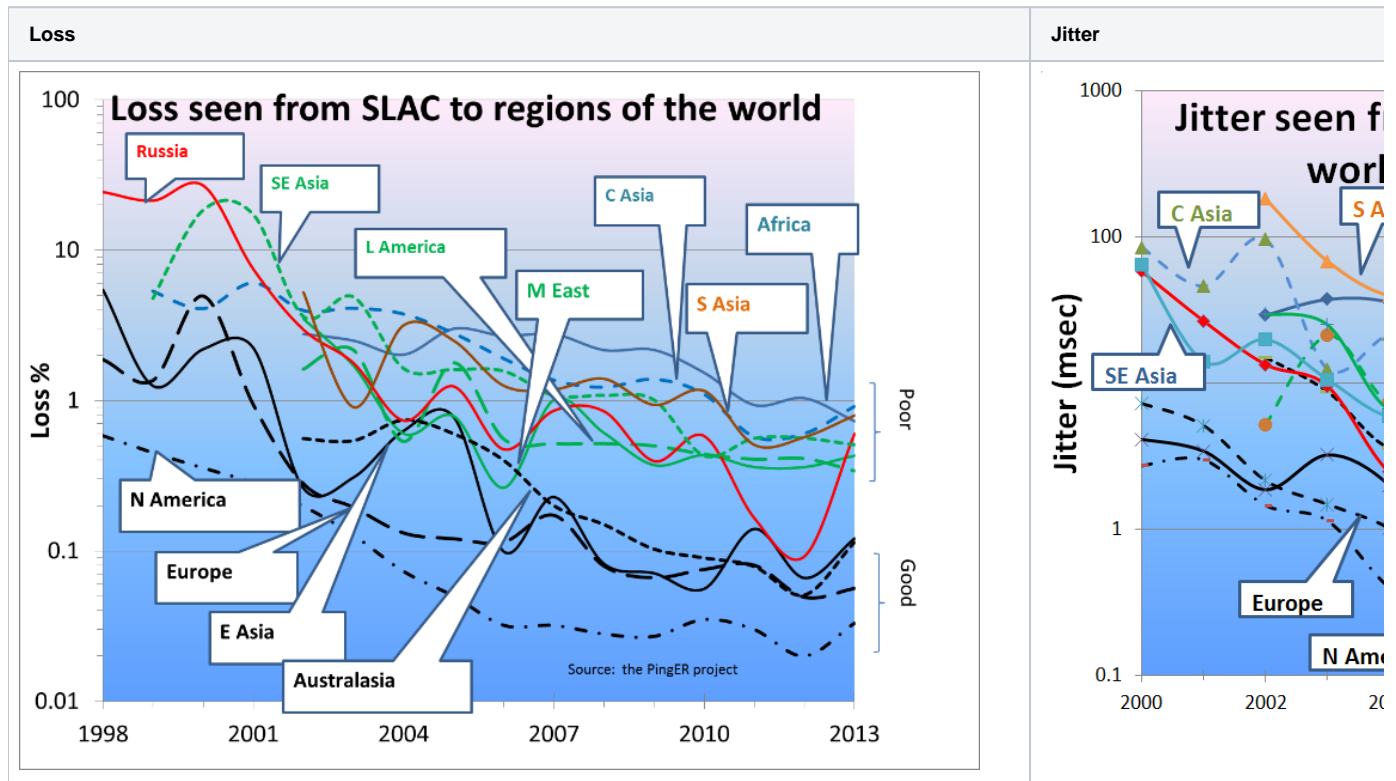

The table below shows the annual losses for the individual hosts. It is taken from a spreadsheet. The Route column indicates whether the route from SLAC to the Russian host goes Eastwards or Westwards.

Route	Remote-Site	Host	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	Delta	Asym
East	Ekaterinoburg Ural Branch Russian Academy of Sciences	www.uran.ru							1.81	1.22	0.52	1.87	1.63	1.28	1.02	0.16	0.54	0.39	71%	-9%
East	Irkutsk	www.irk.ru							0.41	1.23	0.56	0.36	0.19	0.38	0.72	0.23	0.51	0.64	127%	6%
?	Tomsk Educational Network	www.tsc.ru							0.28	1	4.23	11.6	2.43	1.45	5.53	0.44	0.9	1.2	134%	7%
East	St Petersburg Federal Center RUNNet	www.runnet.ru							0.14	0.74	0.34	0.63	0.23	0.08	0.03	0.08	0.03	0.04	140%	8%
East	Nizhy Novgorod University	www.unn.ru								0.77	1.37	1.59	2.93	1.17	0.12	0.08	0.14	0.06	154%	11%
East	Khimki Speedtest, Nr Moscow	speedtest.bigtelecom.ru										1.33	3.77	0.91	0.6	0.12	0.03	0.1	308%	25%
East	Vladivostok	www.dvo.ru							9.22	3.16	2.63	6.01	2.05	0.6	3.65	0.12	0.15	0.49	331%	27%
East	Moscow State University	ns.sinp.msu.ru									0.19	0.4	0.15	0.17	0.12	0.13	0.08	0.56	746%	38%
East	Moscow Speedtest	st.netbynet.ru										0.01	1.08	0.51	1	0.44	0.13	1.17	922%	40%
East	Moscow Institute for Theoretical and Experimental Physics	mctest.itep.ru									0.26	0.47	0.24	0.19	0.09	0.15	0.07	0.72	984%	41%
West	Novosibirsk Institute for Nuclear Physics	rainbow.inp.nsk.su		0.88	1.73	3.28	1.17	0.09	0.74	2.03	3.04	7.14	6.55	5.15	6.43	0.52	0.14	1.6	1132%	42%
East	Moscow Institute of High Energy Physics	www.ihep.su	26.6	19.3	26.4	11.7	4.08	3.51	2.56	0.8	0.2	0.66	1.07	0.43	0.24	0.17	0.06	1.08	1876%	45%
East	RU.DUBNA.N2	wwwinfo.jinr.ru												0.22	0.34	0.59	0.61			
East	Moscow State University	www.msu.ru							0.68	1.4	0.14	1.02	0.16	0.22	0.14	0.12				
East	Novosibirsk Speedtest	zz.nullwave.ru											0.57	0.64	1.68	4.68	0.59	0.19		
East	Moscow Speedtest	speedtest.meganets.ru											0.24	1.66	1.95	0.34	0.49	0.01		

Looking at the Asymmetry between 2012 and 2013, in the column labeled Asym, it is seen that the main contribution to the increase comes from the hosts in Moscow and the one at Novosibirsk.

Looking at the monthly losses in the figure below (taken from a spreadsheet) large changes are seen in loss are seen month to month. Also one can observe the curves for Moscow ITEP, IHEP and the Sate University track one another fairly closely.

Packet loss seen from SLAC to Russia
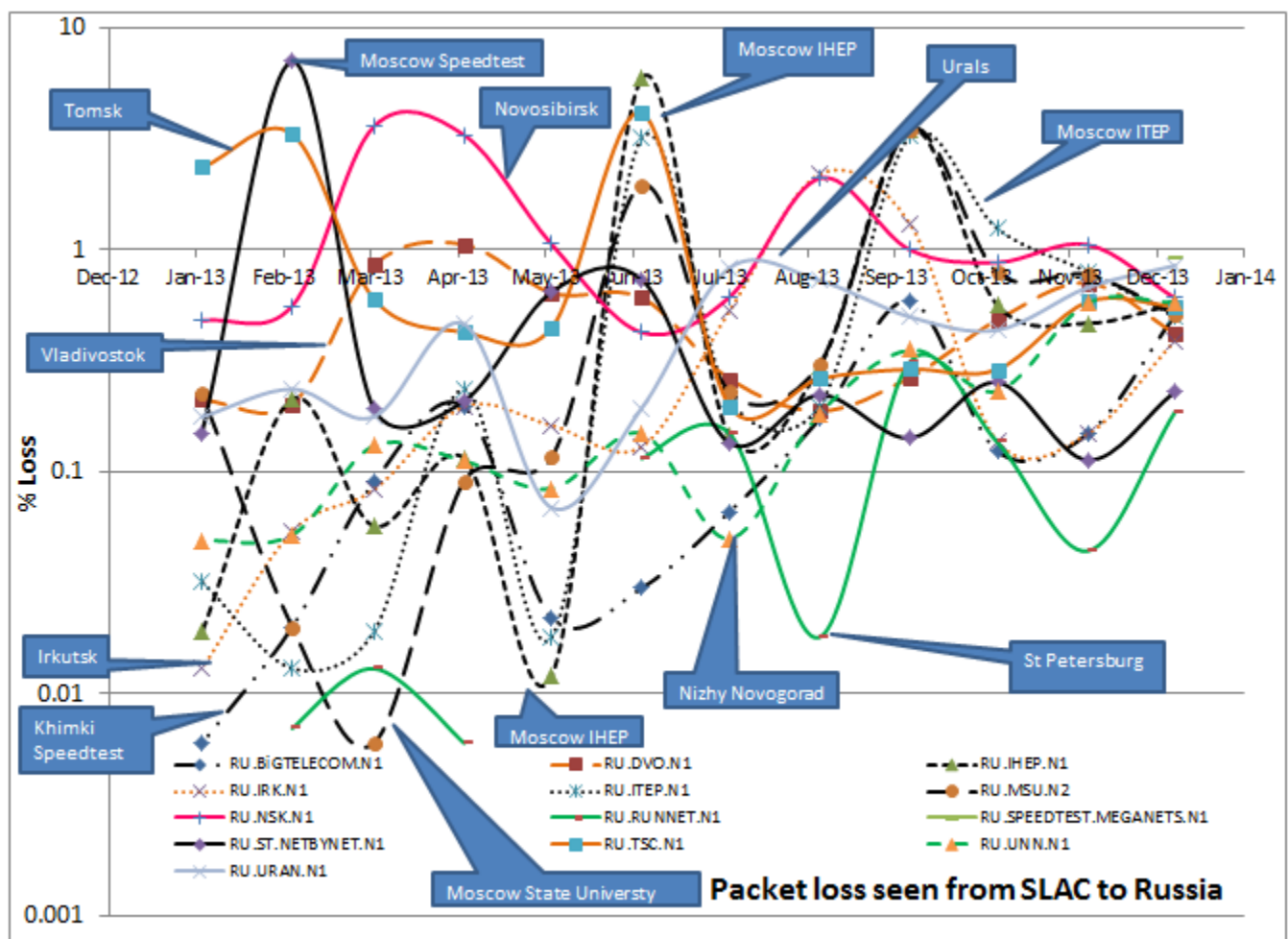
The relative small changes in monthly minimum RTT do not point to any major route changes for the hosts.

Looking at a spreadsheet of minimum RTT measured from SLAC to Russian hosts we can see below a chart. The curves for the East Russian hosts are in orange, those for St Petersburg and Nizhy Novgorod are in green and those for the Moscow region are in black.

Minimum RTT from SLAC to Russian hosts 2013