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Justin Holmer and **Svetlana Roudenko*** (roudenko@gwu.edu), Department of Mathematics,
The George Washington University, Washington, DC 20052. *On the blow up behavior of solutions
to the focusing nonlinear Schroedinger equation.*

We study blow-up solutions to the focusing NLS equations in the mass-critical and mass-supercritical cases, and discuss dynamics of such solutions. In particular, we show that the log-log blow-up solutions to the mass-critical equation, studied by Merle-Raphael, remain regular in the energy space away from the blow-up point. This implies, for example, that there exist H^1 radial blow-up solutions on a sphere for the 3d quintic (energy-critical) NLS equation, thus, improving the result of Raphael-Szeftel (2008). (Received January 17, 2011)