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**Nikita A. Sakhanenko\*** ([sanik@cs.unm.edu](mailto:sanik@cs.unm.edu)), E548, Los Alamos National Laboratory, Los Alamos, NM 87545. *Interpolating Sparse Shock Physics Data Sets Using Support Vector Regression*. Preliminary report.

Shock physics experiments are often complicated and expensive. As a result, researchers are unable to conduct as many experiments as they would like – leading to sparse data sets. In this presentation, Support Vector Machines for regression estimations are applied to velocity data sets for shock damaged and melted tin metal. Challenges in training of the learning machine imposed by the data are described. Some success at interpolating between data sets is achieved. Advantages of the results and implications for future work are discussed. (Received February 01, 2006)