1057-81-235   **Davide Gaiotto*** (`dgaiotto@gmail.com`), Einstein Drive, Princeton, NJ 08540, and **Gregory W Moore** and **Andrew Neitzke**. *Wall-crossing and Hitchin Systems. Part 1: Motivic Wallcrossing and Line Operators in $N = 2$ Gauge Theory.*

Part 1: We will describe a new physical proof of the wall-crossing formula for BPS states in N=2 supersymmetric field theories, using properties of supersymmetric line operators. This new proof also yields an extension of the wall-crossing formula which keeps track of the spin content of the BPS spectrum. We also introduce and prove a new variant of the wall-crossing formula, for BPS states which live on surface operators. (Received January 24, 2010)