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Impact of barrier height distribution on tunneling conductance and extracted barrier parameters DUSTIN BELYEA, CASEY MILLER, University of South Florida — The net tunneling conductance of metal-insulator-metal tunnel junctions is modeled using a distribution of barrier heights consistent with distributions typical of state-of-the-art junctions. Fitting numerically generated conductance data that include height distributions with tunneling models that assume a single-height barrier allows us to determine the effective barrier height and width associated with a more realistic tunnel junction. Moderate distributions cause the net conductance to resemble that of a perfect barrier that is shorter, and slightly wider than the mean barrier.

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