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Roberto J Perez* (roberto.perez11@upr.edu), P.O. Box #817, Vega Baja, PR 00694, and
Megan Brunner, Natalie Wiens and Nathan Albin. *The Modulus Function of Walk
Families.*

The modulus of a family of walks on a weighted undirected graph provides a quantitative assessment of the "richness" of the family. The modulus is computed by minimizing an energy function over a set of admissible metrics on the graph. In certain special cases, the modulus generalizes the concepts of shortest path, minimum cut, and effective resistance. This paper explores continuity properties of the modulus and the associated extremal graph metrics. It then extends to look at the modulus of long walks on linear graphs and balanced trees. (Received September 13, 2014)