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Michael J. Schramm* (schramm@lemoyne.edu), Le Moyne College, Department of Mathematics, Syracuse, NY 13214. *Using Calculus to Motivate Compactness and Connectedness.*

The topics of compactness and connectedness are generally quite difficult for even very strong first-time students of Real Analysis. To be sure, these are topics whose depth and subtlety go beyond what students have encountered previously in the course, but part of the reason for the difficulty must lie in the fact that the topics are very often presented with little if any motivation. In many cases, the heart of the motivation for studying the topics (at least as they relate to the Real number line) is never mentioned at all. I approach these topics in a way that might be entirely backward. I not only begin with the motivation, I essentially use it as the definitions of the terms. The resulting discussion still covers all the usual ground, but seems more accessible. (Received September 25, 2006)