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David Ben-Zvi*, University of Texas at Austin. *Representation theory and gauge theory.*

One of the most exciting recent developments in representation theory (due in large part to the influence of Kapustin-Witten and Lurie) has been the realization that many of its deepest structures can be elegantly understood from the perspective of (topological) quantum field theory, specifically (supersymmetric) gauge theory. I will introduce some of these ideas, focusing on my work with Nadler in which we define and study a three-dimensional topological field theory, the character theory of a complex Lie group G , which captures much of the representation theory of G and its real forms. (Received June 05, 2008)