MATLAB Implementation of C1 finite elements: Bogner-Fox-Schmit rectangle

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Rahman and Valdman (2013) introduced a new vectorized way to assemble finite element matrices. We utilize underlying vectorization concepts and extend MATLAB codes to implementation of Bogner-Fox-Schmit C^1 rectangular elements in 2D. Our focus is on the detailed construction of elements and simple computer demonstrations including energies evaluations and their visualizations.

Keywords: MATLAB vectorization, finite elements, energy evaluation.