

## **Some New Staggered DG Methods on Polygonal Meshes**

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The Staggered Discontinuous Galerkin (SDG) method is a numerical approach for solving partial differential equations, particularly on complex meshes like polygonal or polyhedral grids. The method is based on a mixed formulation along with staggered arrangement of primal and dual grids, which enhances stability and ensures local conservation of fluxes. SDG is known for its flexibility in handling various types of geometries and its ability to deliver accurate results without requiring stabilization techniques. This method has been successfully applied to problems in areas like fluid dynamics, electromagnetics, and structural mechanics.

In this talk, we briefly review our contributions on SDG and introduce some of the new SDG spaces, and discuss relations with existing polytopal element methods.

### References:

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