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Using particles to improve gradient-augmented level set methods for surface advection OLIVIER MERCIER, J.-C. NAVE, McGill University, R.R. ROSALES, MIT, B. SEIBOLD, Temple University — Level set methods use the zero contour of an implicit function to represent a surface. Traditional methods only track values of the level set function on grid points at each time step. Gradient-augmented methods (and more generally jet-schemes) also keep track and use derivative information. In this talk we will show how these gradient-augmented methods offer a natural framework for incorporating Lagrangian particle information to improve the conservation of mass during advection of surfaces.

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