

# Filtering for Visualization

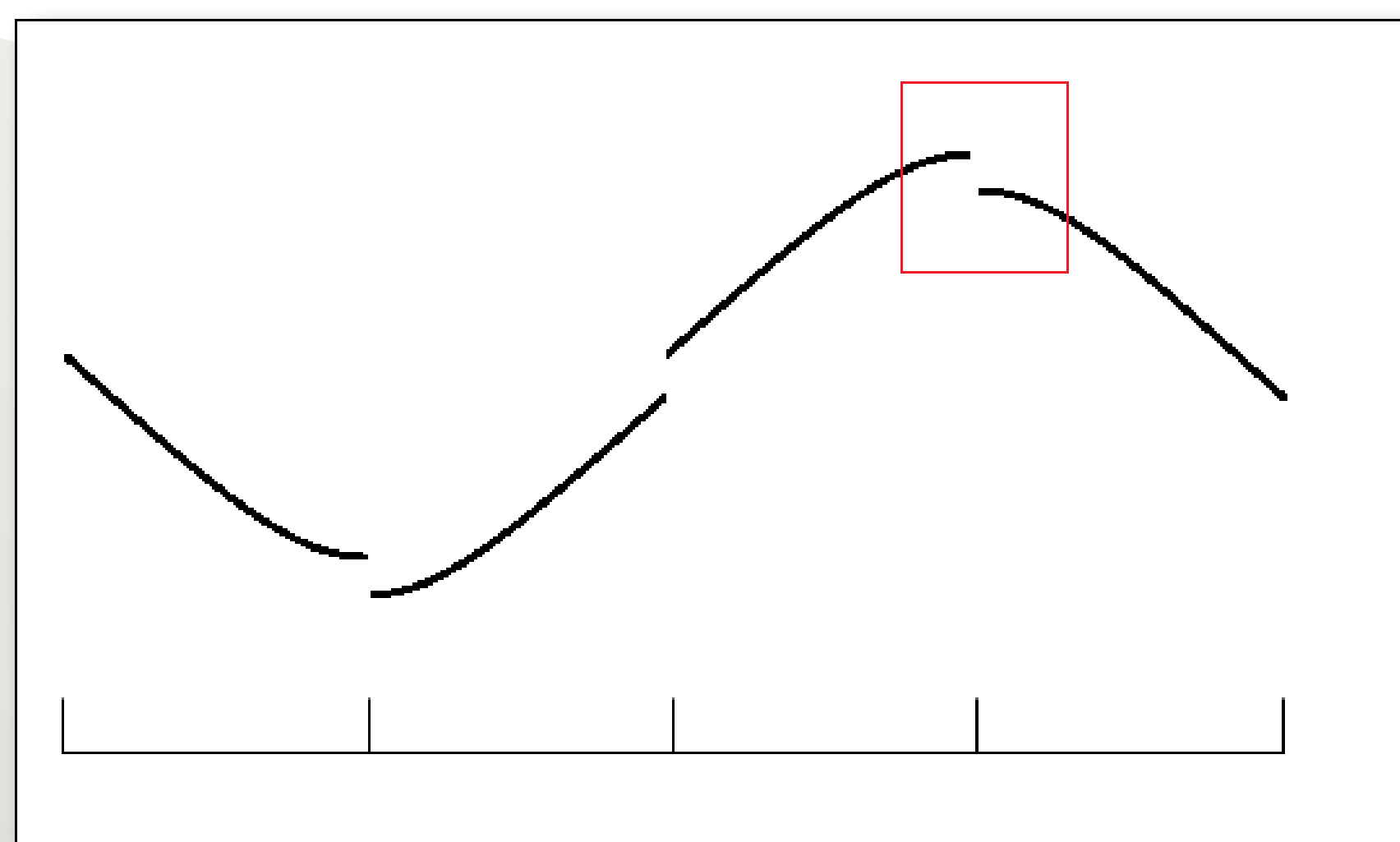
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## Model problem and solution:

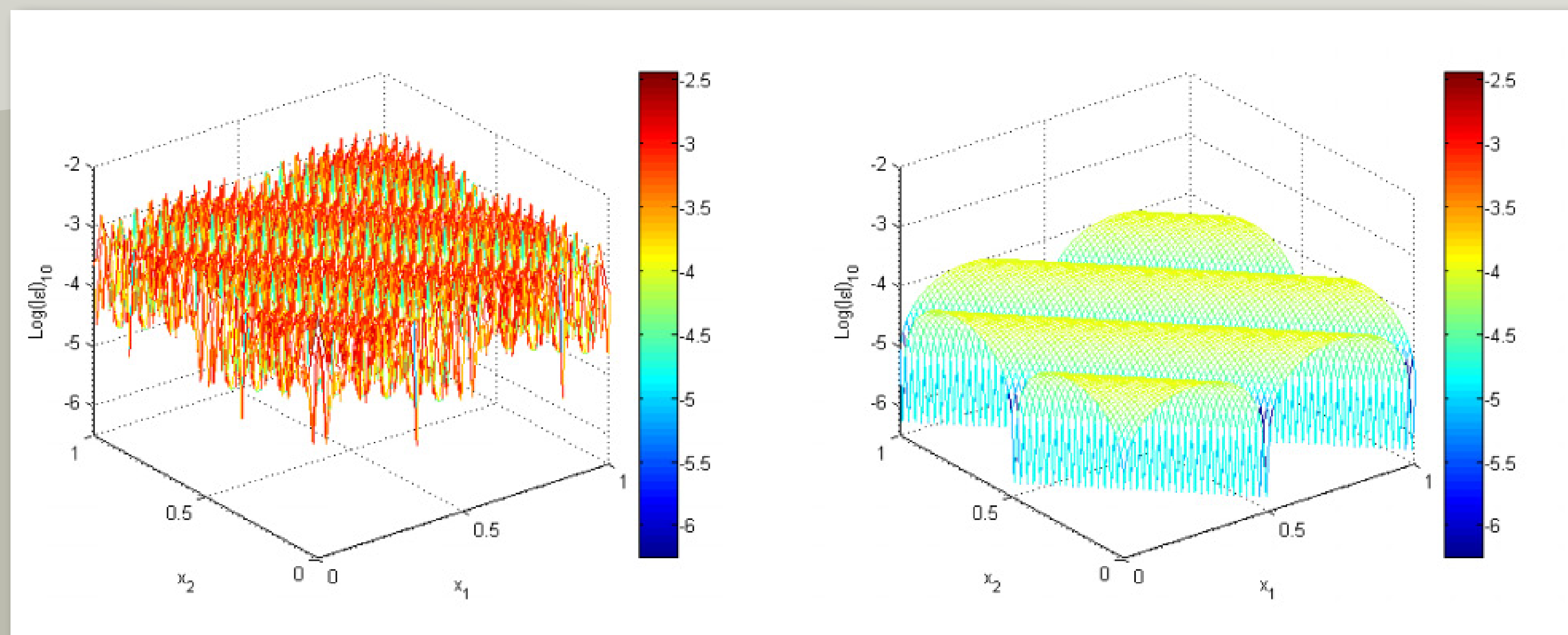
- Discontinuous Galerkin (DG):

$$u_t + u_x = 0$$

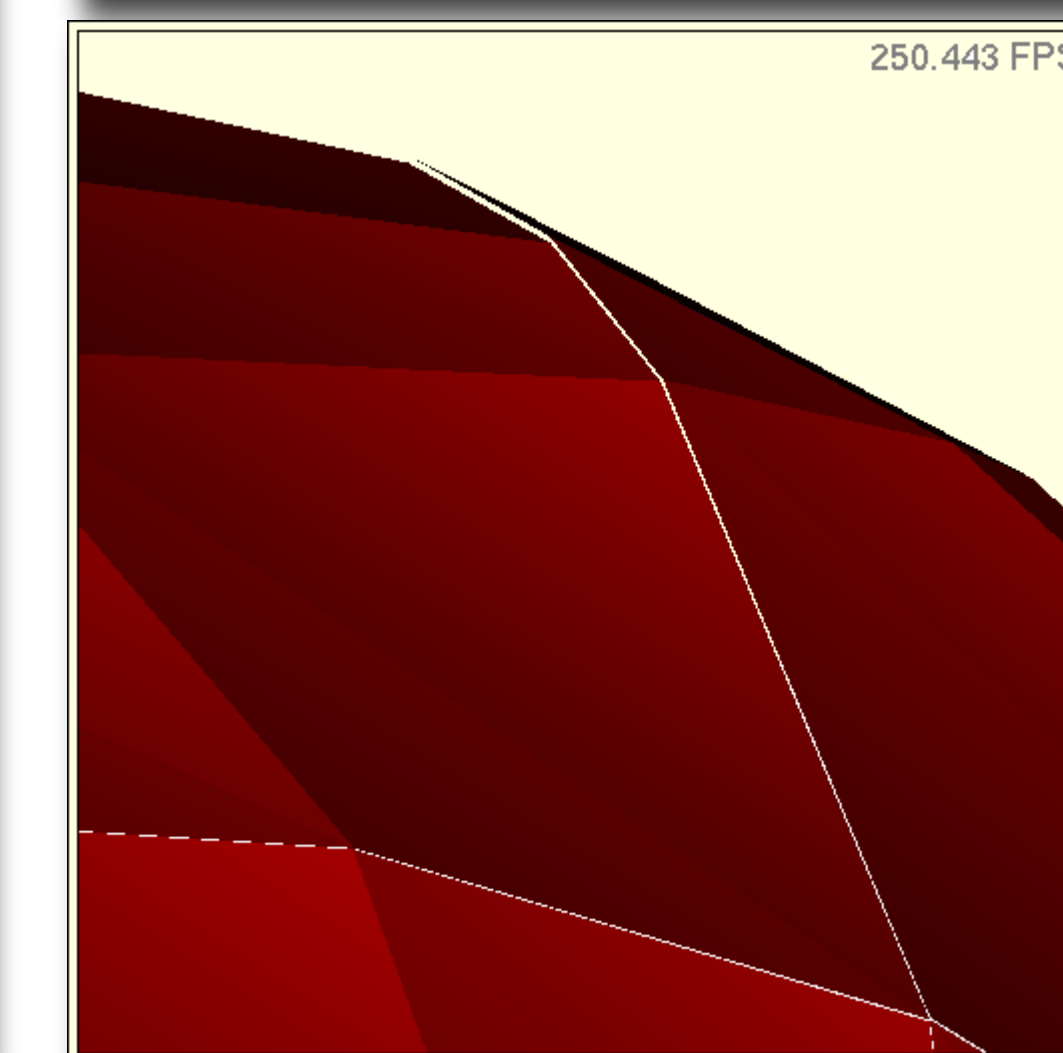
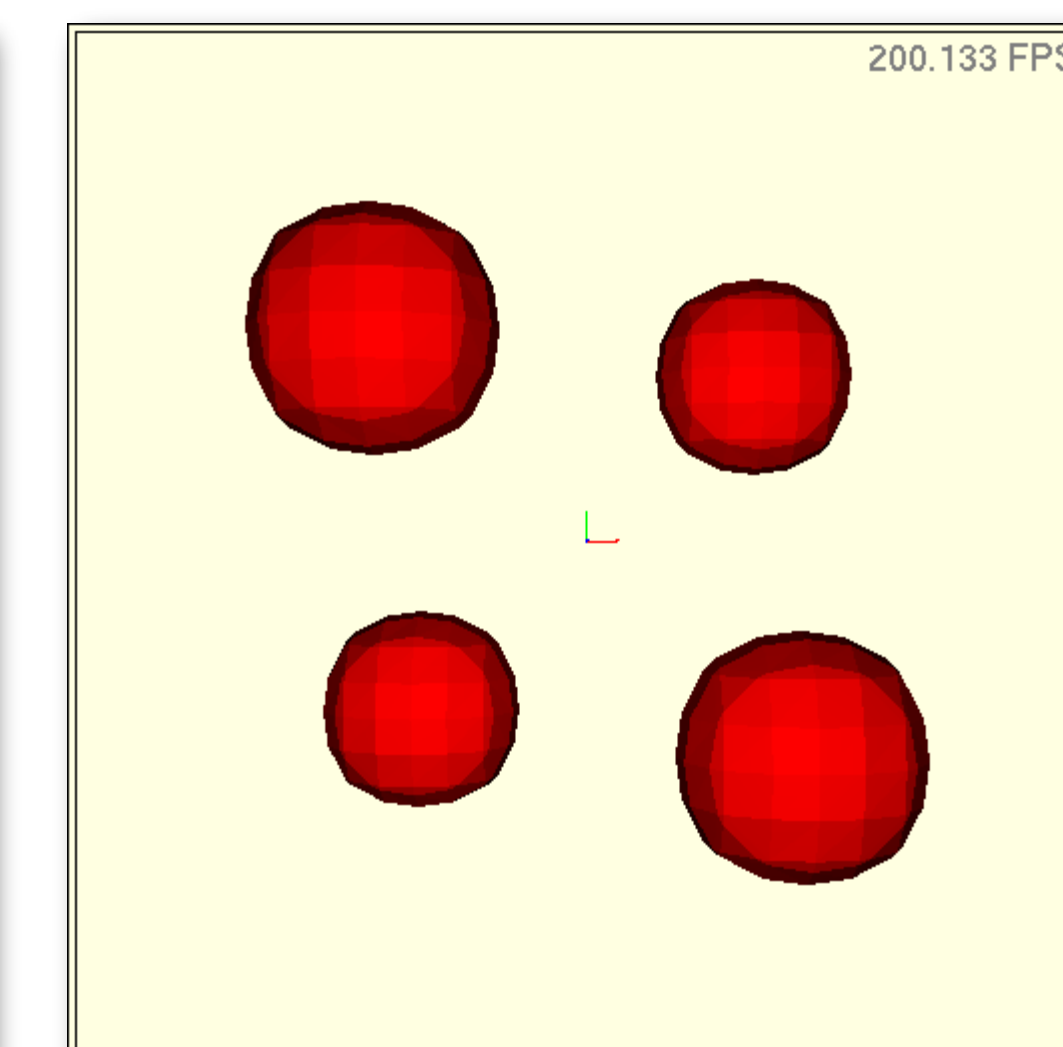
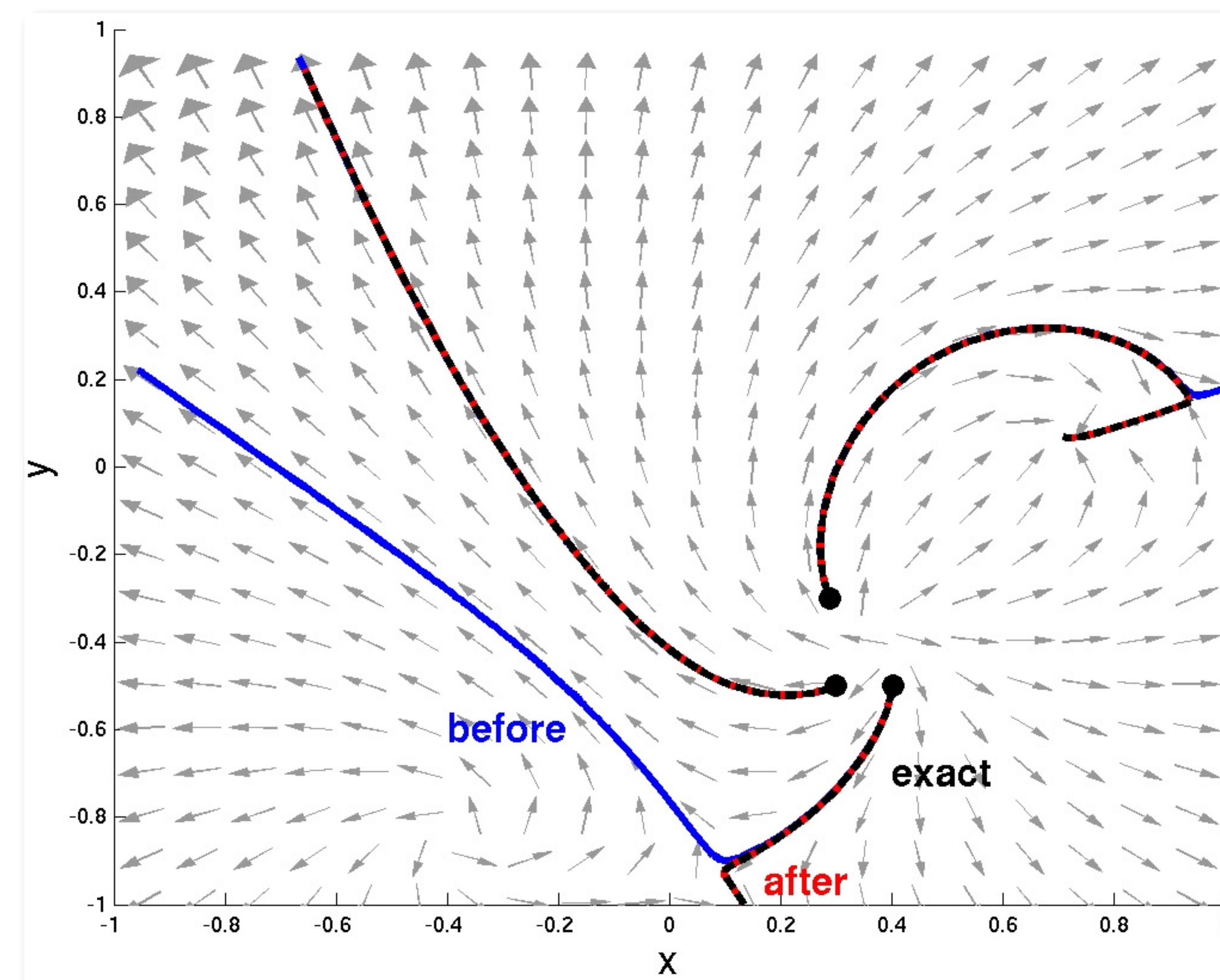
- Flexible
- High Order
- CFD & electromagnetic



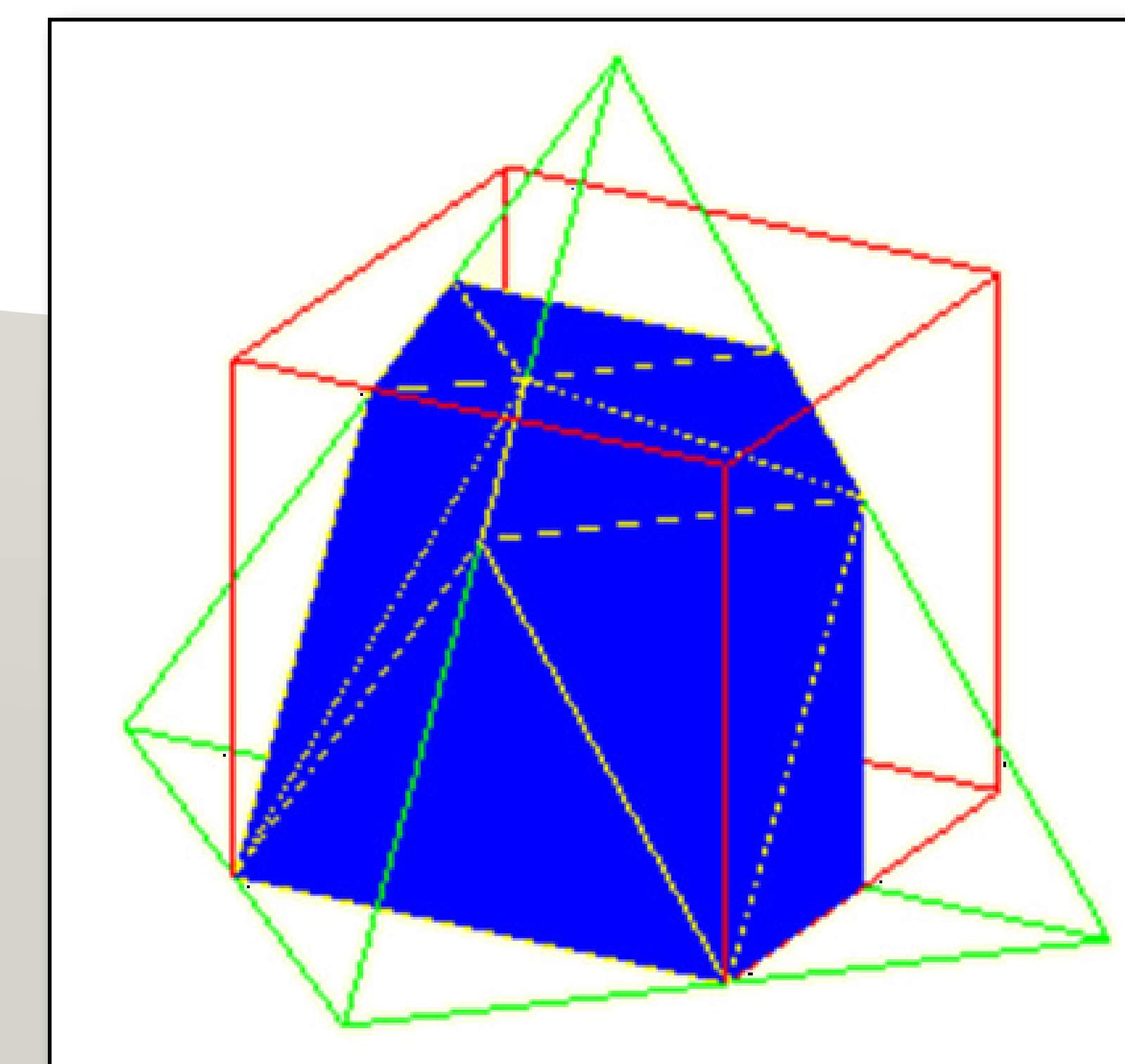
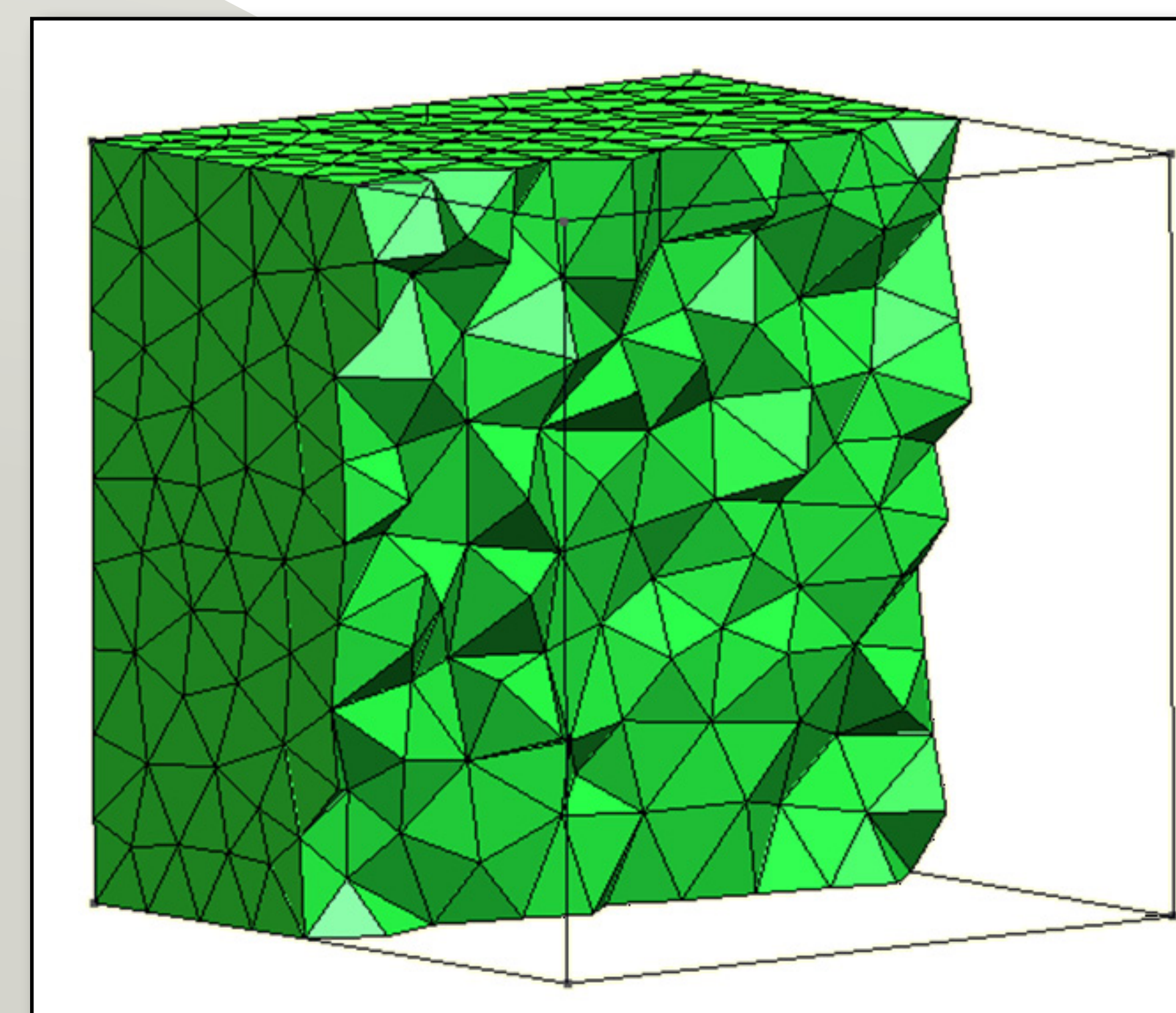
**Filtering:**  $u^*(x) = \int_{\Omega} K(x)u(x)dx$



## Potential difficulties:



## Unstructured Meshes



## Reference:

Mirzaee, H., Ji, L., Ryan, J.K., Kirby, R.M. "Smoothness-increasing accuracy-conserving (SIAC) post-processing for discontinuous Galerkin solutions over structured triangular meshes." SIAM J. Num. Anal. 49, 1899-1920 (2011)

## Acknowledgments:

This project is sponsored in part by the Air Force Office of Scientific Research (AFOSR), Computational Mathematics Program, under grant number FA9550-08-1-0156 and the Air Force Office of Scientific Research, Air Force Material Command, USAF, under grant number FA8655-09-1-3055.

