Future Focus

- GRIT started as a DSC method parallelization assignment. The domain decomposition and batching of the operations have lead to a generic framework for easily customising remeshing methods without the complicated sequential control flow from previous work.
    - Current ongoing work is exploring the interplay between different remeshing methods and needs by various simulation problems. We are particular interested in studying effects such as
        - Fracturing, separation and sliding of interfaces shared by multiple phases
    - Contributors to GRIT have made demonstrations of area maximization, Enright test, Zalesak Disk, hyper elastic deformable models, Newtonian liquids, Magnetostatics and more. We hope to study more problems
        - Rigid body motion, Mathematical Morphological Operations, Multiphase level-set segmentation, Meshing of distance fields, and many more
- The goal of Erleben and Misztal is that GRIT can become a computational paradigm for solving PDEs with complicated moving boundary conditions, such as the ones with dynamic solution dependence or inherent non-smoothness either in PDE model or in geometry representation.

References

- http://orbit.dtu.dk/en/publications/deformable-simplicial-complexes(df4bfb96-476b-4eee-8904-1cf70597cc28).html
- http://image.diku.dk/kenny/download/viinblad.jensen.14.pdf
- https://iphys.wordpress.com/2013/07/15/multiphase-flow-of-immiscible-fluids-on-unstructured-moving-meshes-2/
- https://iphys.wordpress.com/2012/07/18/multiphase-flow-of-immiscible-fluids-on-unstructured-moving-meshes/
- https://iphys.wordpress.com/2011/07/16/mathematical-foundation-of-the-optimization-based-fluid-animation-method/
- https://iphys.wordpress.com/2010/09/04/optimization-based-fluid-simulation-on-unstructured-meshes/
- https://iphys.wordpress.com/2014/09/27/finite-element-modeling-of-the-vocal-folds-with-deformable-interface-tracking/
- https://iphys.wordpress.com/2014/04/16/conforming-contact-manifolds-for-multibody-simulations/
- https://iphys.wordpress.com/2014/04/16/disjoint-domains-interactions-framework-for-hyperelastic-simulations/
- http://image.diku.dk/kenny/download/2012_SCA/
- http://image.diku.dk/kenny/download/2013_BELLAIRS/moving_meshes.pdf
- http://www2.compute.dtu.dk/~janba/DSC-webpage/