CRUNCH Seminars at Brown, Division of Applied Mathematics

Friday - June 16, 2023

Exploring the geometry transferability properties of the HINTS

Adar Kahana, Brown University

Since we started working on the HINTS, we had some very exciting projects and ideas. Some of them have been presented here at CRUNCH. The last talk about the HINTS introduced the method and showed the analysis behind the method. In this talk, we will briefly go over the motivation and show the HINTS. Then, we will see an extension for it that supports different domains. One approach is to directly use the trained HINTS on a domain with a cutout, counting on the generalization capabilities of the method. Another approach we used is the transfer learning method, to fine tune the DeepONet in the HINTS. We show how both methods work on a Darcy flow problem, as well as plane strain elasticity.