Annotated Bibliography

Computational linear elasticity, with applications to geological phenomena

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This article is one of the earliest to describe how to use polynomial discrete elements to approximate solutions in stress displacement in linear elasticity.

The authors are reputable and the article was cited a large number of times, indicating that this is a reliable source.

It is valuable to me because it laid the foundation for the math I will be working with on my project.


This was the article which provided the basis for the work done last summer on this project. It covers ways to approximate stress tensors effects on n-dimensional objects using finite element methods, which is significant for the field of linear elasticity.

It is valuable for my research because it relates directly to the math I will be using.

This paper was created during the previous summer as a part of the project I will be working on. It describes testing of stress tensors against the unit cube and a step-structure using finite element discretization to approximate the solutions.

The paper was created by an undergraduate student, and it is not an influential paper on this field of study. However, because it is the exact work I will be building off of, it is an extremely valuable source for my research.


This article provides an alternative method of approximating solutions partial differential equations using finite elements. However, it is not the method used in my research. Though not directly related to my work, it is good to acknowledge alternative methods used to approach the same topic.


This article further expanded on existing methods of using finite elements to approximate equations used in linear elasticity. This is a precursor to the work I will be doing, and it provided a significant step in expanding the types of problems that can be approximated.

It is a valuable source for my research because it gives further information on the field of study my topic focuses upon.