

**Department of Mathematical Sciences
Florida Atlantic University**

PhD Dissertation Defense

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Angular Rigidity Theory in Planar Frameworks

Monday, July 31, 10:00am in SE 215

Advisor: Dr. Zvi Rosen

For this talk, we will briefly mention some recent relevant papers that motivated the further development of analyzing rigid frameworks using angular constraints. We will discuss classical rigidity (using length constraints) and bearing rigidity (using directional constraints). The object of study is called a framework, that is, mapping vertices of a graph into the real or complex plane satisfying some given set of constraints. We will discuss a new type of angular rigidity matrix using chromatic graphs. These chromatic graphs are derived from the angle graph of a given constrained framework. We give some preliminary results as well as some characterizations on graphs with four vertices. We also discuss a conjecture involving the rigidity matroid of an angle constrained graph. Finally, we will give some computational results for the realization space of small graphs.

Please contact Dr. Hongwei Long (hlong@fau.edu) for an electronic copy of the dissertation.

ALL ARE CORDIALLY INVITED