Rigidity of many-component systems

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Abstract

We consider systems made of many interacting components, both pack-
ings of many bodies, and networks of many edges. There are traditional
optimization programs for both subjects: densest packings for the former
and extremal graphs for the latter. We discuss an outgrowth of these opti-
mization programs: the emergence of phases as the size of the system grows,
and the way global quantities such as rigidity are analyzed for large systems.