

**Fields Institute Workshop Jordan Algebras and Related Fields**  
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*Cubic Jordan algebras and higher composition laws*

Higher composition laws in number theory were discovered by M. Bhargava several years ago. They may be viewed as a generalization of Gauss's law of composition of binary quadratic forms. Bhargava also discovered a mysterious connection between higher composition laws and exceptional Lie groups.

In our talk we will describe relations between spaces underlying higher composition laws and various constructions in the theory of Jordan algebras. We will show how these constructions can be used to shed additional light on existing composition laws, as well as provide new examples of spaces with similar properties.