

How to Squash a 6-Cycle System into a Steiner Triple System

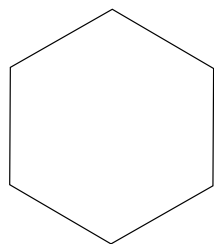
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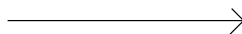
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(joint work with Mariusz Meszka and Alex Rosa)

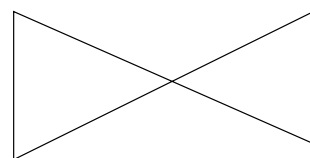
The spectra for Steiner triple systems and 6-cycle systems agree when $n \equiv 1$ or $9 \pmod{12}$. Let (X, C) be a 6-cycle system of order $n \equiv 1$ or $9 \pmod{12}$. Let T be a collection of bowties obtained by squashing each 6-cycle of C into a bowtie (i.e. identifying two 'opposite' vertices of the 6-cycle). If (X, T) is a Steiner triple system we say that the 6-cycle system (X, C) is squashed into the Steiner triple system (X, T) . In this talk we construct, for every $n \equiv 1$ or $9 \pmod{12}$ a 6-cycle system that can be squashed into a Steiner triple system.



6 - cycle



squash



bowtie