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*Packing Circuits in Matroids*

The purpose of this talk is to present a characterization of all matroids  $M$  that satisfy the following minimax relation: For any nonnegative integral weight function  $w$  defined on  $E(M)$ ,

$$\begin{aligned} & \text{Maximum } \{k : M \text{ has } k \text{ circuits (repetition allowed) such that} \\ & \quad \text{each element } e \text{ of } M \text{ is used at most } 2w(e) \text{ times by these circuits}\} \\ & = \text{Minimum } \left\{ \sum_{x \in X} w(x) : X \text{ is a collection of elements (repetition allowed)} \right. \\ & \quad \left. \text{of } M \text{ such that every circuit in } M \text{ meets } X \text{ at least twice} \right\}. \end{aligned}$$

This characterization contains a complete solution to a research problem on 2-edge-connected subgraph polyhedra posed by Cornuéjols, Fonlupt, and Naddef in 1985.

Joint work with Guoli Ding.