## Cycle switching and decompositions into paths

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How do you ensure that you can pair up an entire class room of students day after day without repeating partners? Is it possible to seat 9 students at six round talbes with 4, 5, 5, 6, 8, and 9 chairs at the tables? These questions and more will be answered! Graph theory will help give a more visual representation to these problems. The focus of this talk will be on seating n students at a single straight table of size m and analogues of this problem type.

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