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Graphs embedded on surfaces and their delta-matroids

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By "cutting out" the edges and vertices of a graph cellularly embedded in a surface, we obtain a ribbon graph. A partial Petrial is obtained from a ribbon graph by selecting a subset of the ribbon edges adding a half-twist to each. Delta-matroids generalize ribbon graphs similarly to the way that matroids generalize graphs. The ribbon graph partial Petrial is the analogue of a more general delta-matroid operation. In this talk, we characterize the set of delta-matroids that is closed under this delta-matroid operation by a set of minimal obstructions.

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