A characterization of graph properties testable for general planar graphs with one-sided error

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We consider property testing in general planar graphs, without any bounds for vertex degrees. While testing graph properties in bounded-degree planar graphs is quite well understood, almost nothing is known in the case of general graphs. In this talk, we will prove that, informally, a graph property P is testable with one-sided error for general planar graphs if and only if testing P can be reduced to testing for a finite family of finite forbidden subgraphs. Our approach extends to arbitrary minor-free graphs.

This is a joint work with Christian Sohler.