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Iain Moffatt* (imoffatt@jaguar1.usouthal.edu), Mathematics and Statistics, University of South Alabama, Mobile, AL 36688. *Characterizing the ribbon graphs of knots.*

There is a well-known way to describe a link diagram as a (signed) plane graph, called its Tait graph. This concept was recently extended, providing a way to associate a set of embedded graphs (or ribbon graphs) to a link diagram. While every plane graph arises as a Tait graph of a unique link diagram, not every embedded graph represents a link diagram. Furthermore, the same embedded graph can represent many link diagrams. Here we characterize the class of embedded graphs that represent link diagrams. This characterization is then used to relate all of the link diagrams that give rise to the same set of embedded graphs. (Received January 11, 2012)