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Subdivisibility: Towards an “algebra” of connectivity.

Connectivity is a central concept in graph theory. The basic concept of connectivity has been extended in many directions encompassing graph theoretical notions such as Hamiltonicity, panconnectivity, pancyclicity, cycability, distance, girth, circumference, planarity, embeddability, etc. These notions relate to the existence, structure and size of specific subdivisions. We set up here a formal background for the unification and generalization of these notions. In order to vindicate the potential of this approach, some recent subsuming results will be presented. (Received September 27, 2005)