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Hao Li* (li@lri.fr), LRI, UMR 6823 CNRS-Universite Paris-sud 11, Bat.490, 91405 Orsay, France, and **Yan Zhu** (zhu@lri.fr), LRI, UMR 6823, CNRS-Universite Paris-sud 11, bat. 490, 91405 Orsay, France. *Cyclable sets of vertices in 3-connected graphs.*

A subset of vertices S is cyclable if there is a cycle C containing all vertices of S . Clearly it is a generalization of hamiltonicity since a graph is hamiltonian if the set of all its vertices is cyclable. Beginning from a result of Dirac in 1952, many results on sufficient conditions that relate to degree sum and neighborhood of vertices for hamiltonicity and cyclability, have been obtained. We give a new sufficient condition on degree sum, neighborhood union and neighborhood intersections of any four independent vertices in the graph. We also study the extremal cases of this condition. (Received January 30, 2009)