

## Local Properties that imply Global Cycle Properties

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We say a graph  $G$  has a property  $\mathcal{P}$  *locally* (or  $G$  is *locally*  $\mathcal{P}$ ) if for every vertex  $v$  in  $G$ , the graph induced by the open neighbourhood  $N(v)$  of  $G$  has property  $\mathcal{P}$ . For example, a graph  $G$  is *locally connected* if  $G[N(v)]$  is connected for every vertex  $v$  in  $G$ . We discuss the global cycle structure of locally connected, locally traceable and locally hamiltonian graphs with bounded vertex degree.