1147-05-463 **Sebastian Cioaba**, Department of Mathematical Sciences, University of Delaware, Newark, DE 19716, and **Xiaofeng Gu***, Department of Mathematics, University of West Georgia, Carrollton, GA 30118. *Rigidity in the Euclidean plane and algebraic connectivity.*

Rigidity, arising in discrete geometry and mechanics, is the property of a structure that does not flex. A combinatorial characterization of rigidity in the Euclidean plane has been obtained by Laman in 1970, which results the following definition of rigid graphs. A graph G is sparse if $|E(H)| \leq 2|V(H)| - 3$ for every subgraph H of G with $|V(H)| \geq 2$; if in addition $|E(G)| = 2|V(G)| - 3$, then G is minimally rigid. A graph is rigid if it contains a spanning minimally rigid subgraph. A theorem of Lovász and Yemini shows that every 6-connected graph is rigid. It is well-known that the algebraic connectivity is a lower bound of connectivity, and thus a graph with algebraic connectivity at least 6 is rigid. We will improve the result. (Received January 24, 2019)