Ellen K Sparks* (esparks89@att.net), Department of Mathematics, St. Anne Community High School, 650 W Guertin St, St. Anne, IL 60964, and Adriana Arias, Ryan C. Bunge, Maira Carmona Herrera, Saad I El-Zanati and Uthoomporn Jongthawonwuth. On cyclic decompositions of $K_{n-1,n-1} + I$ into a 2-regular graph with at most 2 components.

Let $G$ with $n$ edges be a 2-regular bipartite graph with one or two components. We show that there exists a cyclic $G$-decomposition of the complete bipartite graph $K_{n-1,n-1} + I$, where $I$ is a 1-factor. (Received September 17, 2013)