1056-58-1299   **Emily B. Dryden*** (`emily.dryden@bucknell.edu`), Department of Mathematics, Bucknell University, Lewisburg, PA 17837, and **Victor Guillemin** and **Rosa Sena-Dias**. *Hearing Delzant polygons from the equivariant spectrum.*

Can one hear the moment polytope of a toric manifold? Motivated by this question of Miguel Abreu, we ask whether the equivariant spectrum of the Laplacian acting on smooth functions on a toric manifold determines the moment polytope associated to the manifold. Heat invariant techniques, combined with combinatorial and geometric arguments, allow us to prove the desired result for Delzant polygons. (Received September 21, 2009)