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Emily B. Dryden* (ed012@bucknell.edu), **Diana Macedo** and **Rosa Sena-Dias**. *Can you hear the metric on a sphere?*

Asking whether you can “hear” a geometric attribute of a surface is an informal way of asking about the relationship between the attribute and the vibration frequencies of the surface. In the simple setting of metrics on a S^2 that are invariant with respect to a natural circle action, we examine situations in which the metric can be determined by the vibration frequencies plus information coming from the action. This is joint work with Diana Macedo and Rosa Sena-Dias. (Received September 20, 2015)