The authors strengthen the main result of their paper [Rev. Mat. Iberoam. 32, No. 3, 971–994 (2016; Zbl 1361.32011)]. They use purely dynamic arguments to prove that, under some sufficient conditions, a compact real analytic surface without boundary \((M, g)\) possesses a pole, i.e., a point \(p\) so that every geodesic starting at \(p\) returns to \(p\) at time \(2T_p\) as a smoothly closed geodesic. Some questions for further study are also presented, e.g., whether all real analytic Riemannian surfaces with maximal eigenfunction growth are surfaces of revolution or whether the results of this paper admit some kind of generalization to higher dimensions.

Reviewer: Eugen Pascu (Montréal)

**MSC:**

- 32C05 Real-analytic manifolds, real-analytic spaces
- 58J50 Spectral problems; spectral geometry; scattering theory on manifolds
- 35P20 Asymptotic distributions of eigenvalues in context of PDEs
- 53C22 Geodesics in global differential geometry

**Keywords:**

real analytic surfaces; geodesics; eigenfunctions; \(L^\infty\) bounds

**Full Text:** DOI

**References:**


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