

Quasinormal frequencies of asymptotically flat two-dimensional black holes

A. López-Ortega · I. Vega-Acevedo

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Abstract We discuss whether the minimally coupled massless Klein-Gordon and Dirac fields have well defined quasinormal modes in single horizon, asymptotically flat two-dimensional black holes. To get the result we solve the equations of motion in the massless limit and we also calculate the effective potentials of Schrödinger type equations. Furthermore we calculate exactly the quasinormal frequencies of the Dirac field propagating in the two-dimensional uncharged Witten black hole. We compare our results on its quasinormal frequencies with other already published.

Keywords Quasinormal modes · Two-dimensional black holes · Witten black hole

1 Introduction

Two-dimensional gravity theories are widely studied [1]. Although the simplifications in two-dimensional gravitational models remove some relevant features of higher dimensional gravitational systems, these also allow more detailed analysis of some physical phenomena. Furthermore these simplifications allow to address some

A. López-Ortega (✉)

Centro de Investigación en Ciencia Aplicada y Tecnología Avanzada, Unidad Legaria,
Instituto Politécnico Nacional, Calzada Legaria # 694,
Colonia Irrigación, Delegación Miguel Hidalgo, 11500 Mexico, D.F., Mexico
e-mail: alopezo@ipn.mx

I. Vega-Acevedo

Departamento de Física, Escuela Superior de Física y Matemáticas, Instituto Politécnico Nacional,
Unidad Profesional Adolfo López Mateos, Edificio 9, 07738 Mexico, D.F., Mexico
e-mail: ivega@esfm.ipn.mx