



UNIVERSIDAD TECNICA
FEDERICO SANTA MARIA

DEPARTAMENTO
DE MATEMÁTICA

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MODALIDAD VIRTUAL VIA ZOOM

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Complex geometrical optics solutions for coupled conductivity equations

This talk is devoted to study complex geometrical optics (CGO) solutions to the coupled conductivity equations written in a matrix form $\operatorname{div}(Q \cdot \nabla U) = 0$ in \mathbb{R}^2 for symmetric, positive definite matrix functions A . The way to compute those solutions is to use the vectorial solutions of an associated Beltrami system. We prove the existence of CGO solutions and then use a numerical strategy based on the method introduced by Huhntanem and Perämäki in 2012 for the Beltrami equation. Numerical experiments are considered to show the influence of coupled equations.