## Acoustic and optical black holes

GREGORY ESKIN UC – Los Angeles, Los Angeles, CA 90095-1555, USA eskin@math.ucla.edu

Acoustic and optical black holes appear in the study of wave equations describing the wave propagation in the moving medium. They include the black holes of the general relativity when the corresponding Lorentz metric is the solution of Einstein equation.

We investigate the existence and the stability of the black and white holes in the case of two space dimensions and in the axisymmetric case. The case of nonstationary, i.e. time-dependent metrics, also will be considered.