İSTANBUL ANALYSIS SEMINARS

Necessary and Sufficient Conditions of the Solvability of the Gauss Variational Problem

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We shall be concerned with the well-known Gauss variational problem on the minimum of the energy in the presence of an external field, the infimum being taken over fairly general classes of signed Radon measures in a locally compact space. We shall show that in the noncompact case the problem is in general unsolvable, and this occurs even under extremely natural assumptions (in particular, for the Newtonian, Green, or Riesz kernels in an Euclidean space). Necessary and sufficient conditions for the problem to be solvable will be given. Some related extremal problems are also supposed to be discussed.

Date and Time: April 6, 2007, 15:45

Place: Sabancı Üniversitesi, Karaköy İletişim Merkezi,
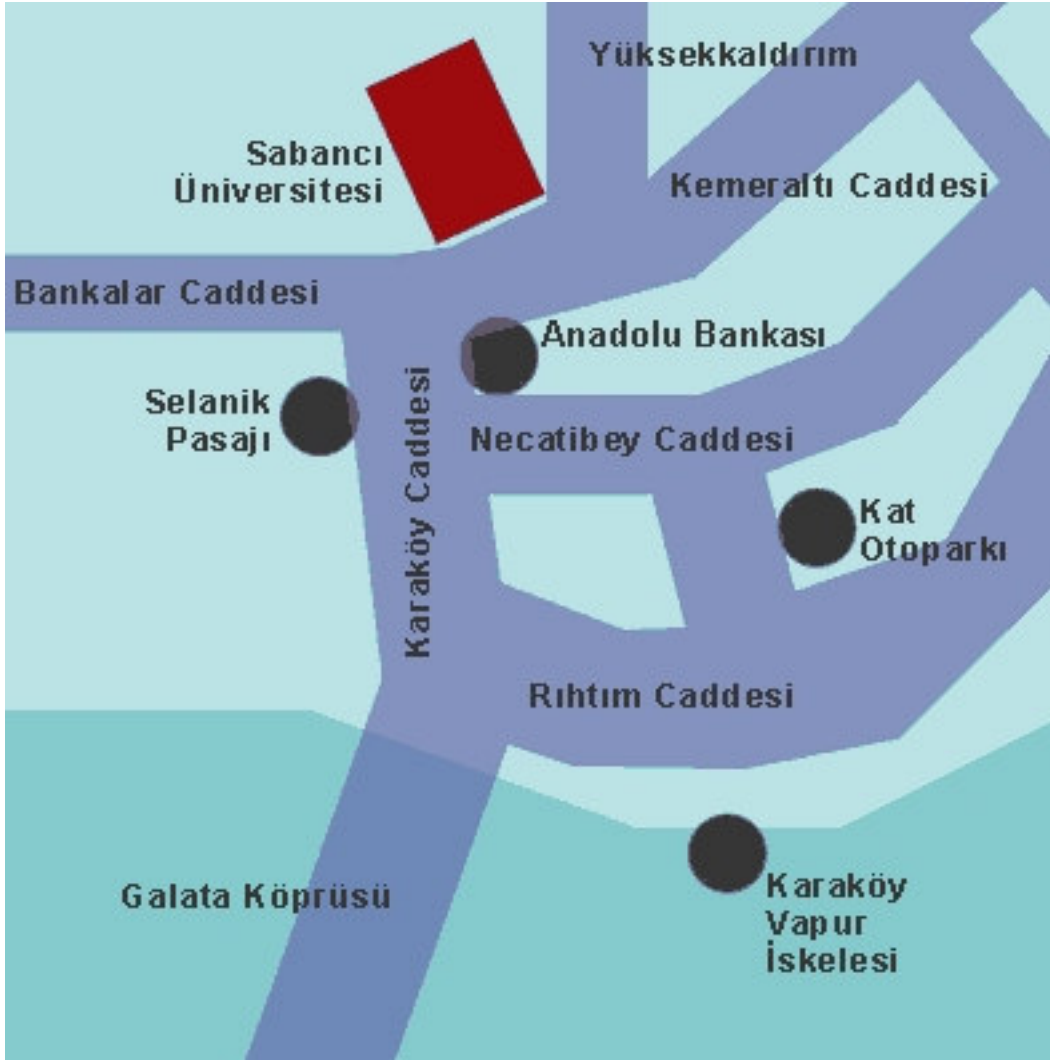Bankalar Caddesi No:2 Karaköy İstanbul

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Sketch of Karaköy İletişim Merkezi