İSTANBUL ANALYSIS SEMINARS

How the 2-Capacity of a Space Condenser can be Written in Terms of the Newtonian Energies? A Solution to F. W. Gehring's Problem

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In $\mathbb{R}^n$, $n \geq 2$, let us consider a condenser, that is, an ordered pair of closed disjoint sets A and B, A being compact. By T. Bagby, the 2-capacity of a plane condenser turns out to be reciprocal (up to a constant factor) with the infimum of the logarithmic energies over the class of all Borel measures ν such that ν^+ and ν^- are unit measures on A and B, respectively. F. W. Gehring asked whether this still holds for a space condenser, but with the Newtonian energies instead of the logarithmic ones. We have proved that the answer to F. W. Gehring's problem is, generally speaking, **no**, and obtained necessary and sufficient conditions for that conjecture to be valid. Besides, an actual description of the 2-capacity of an arbitrary space condenser in terms of the Newtonian energies has been given. Some related problems are also supposed to be discussed.
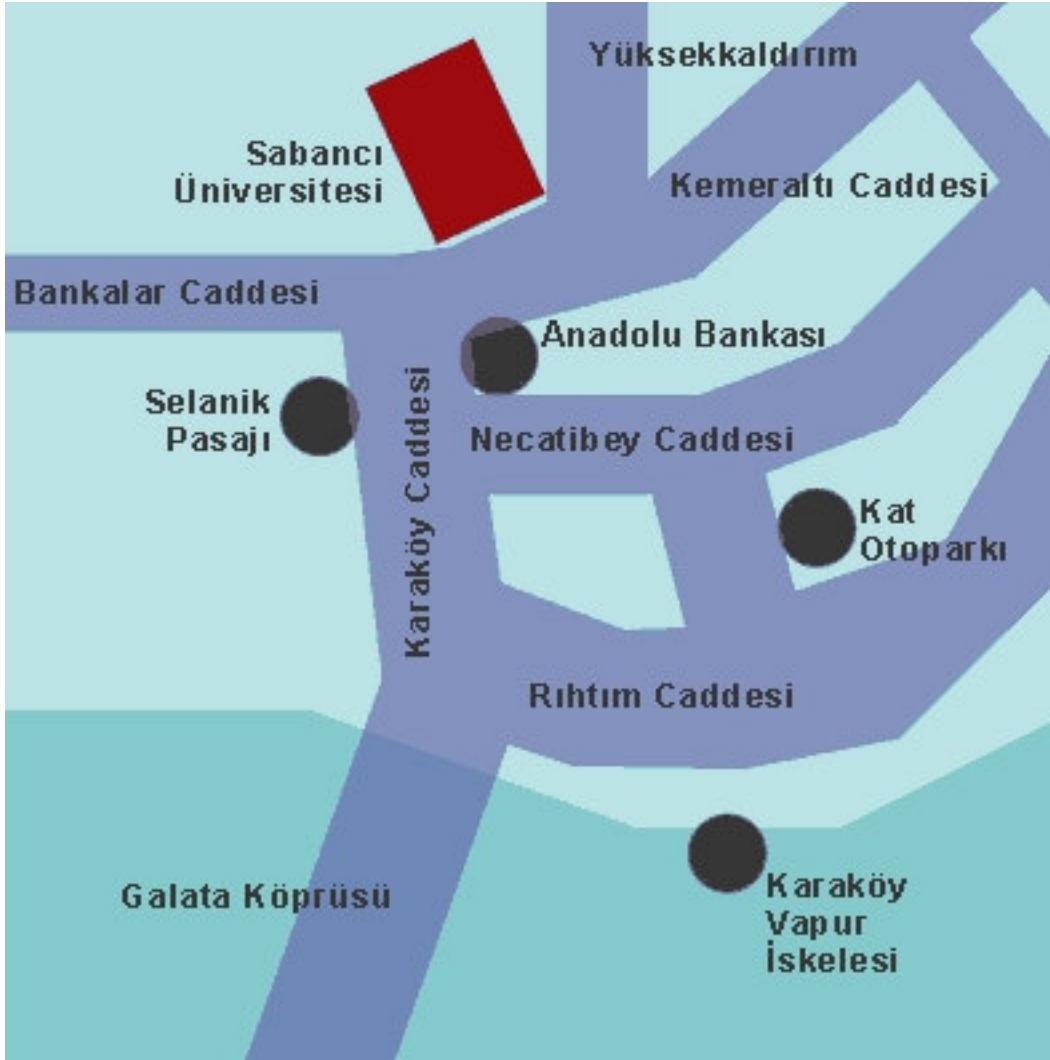
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Sketch of Karaköy İletişim Merkezi