

Application of Lagrange's Multiplier in Some Optimisation Problems Related to Physics

S.N. MAITRA

*Retired Head of Mathematics Department
National Defense Academy
Khadakwasla
Pune-411023(MS)*

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Abstract: Several optimisation problems including those in Physics are innovated and are solved by applying Lagrange's Multipliers. Thus the minimum equivalent resistance in some electric circuits is computed subject to chosen constraints. Optimum distribution of dimensions of some water tanks with given metallic sheets for construction of the tanks, and the corresponding maximum volume of water that can fill the tanks are determined. Finally, the minimum time of travel by a train between two terminating stations along with the corresponding optimum spacings of the intermediate stations is evaluated. Also evaluated in two problems each, the maximum value of a function of three variables restricted by a set of two constraints.