## A Mathematical Framework for Expanding a Railway's Theoretical Capacity

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**Abstract :** Analytical techniques for measuring and planning railway capacity expansion activities have been considered in this article. A preliminary mathematical framework involving track duplication and section sub divisions is proposed for this task. In railways, these features have a great effect on network performance and for this reason they have been considered. Additional motivations have also arisen from the limitations of prior models that have not included them.

Keywords : capacity analysis, capacity expansion, railways, track sub division, track duplication

Conference Title : ICSEMA 2015 : International Conference on Systems Engineering Modeling and Analysis

Conference Location : Venice, Italy

Conference Dates : November 09-10, 2015