

**Application of Mathematical Optimization Technologies to Railways**  
**- Recent Trends and Future Prospects -**

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This paper describes some of the topics from the recent research and development on the application of mathematical optimization technologies to railway operations, which include transportation planning, crew scheduling, maintenance staff scheduling, sensor network deployment plan, etc. We also discuss the future prospects of mathematical optimization technologies in railway applications, taking into consideration the rapid progress in computer technologies including parallel processing and cloud computing.