Operation and Power Supply (Simulation) for China Railways
- by experience -
Eine Expertenrunde für das Gesamtsystem Bahn

The Expert Team for the Complete Railway System
BeiJing – TianJing Dedicated Passenger Line

General Overview
BeiJing – TianJing Dedicated Passenger Line

Key Features

- 25kV 50Hz 2AC Power Supply System,
- 2 TSS,
- 7 ATS,
- Minimum 3 minutes headway,
- Operation speed is 350km/h,
- Nonstop travel time is 30min,
- Opening day August 1st 2008 (parallel commercial operation was immediately suspended),
- 115km main line length,
- 3 intermediate Stations,
- ~87% bridge structure,
BeiJing – TianJing Dedicated Passenger Line

Bridge Construction
BeiJing – TianJing Dedicated Passenger Line
Test & Commissioning Planning
BeiJing – TianJing Dedicated Passenger Line
Opening day August 1st 2008
WuHan – GuangZhou Passenger Dedicated Line

Key Features

- 25kV 50Hz 2AC Power Supply System,
- 20 TSS,
- 38 ATS / SP,
- Minimum 3 minutes headway,
- Operation speed is 350km/h,
- Nonstop travel time is 3h,
- Opening day December 26th 2009 (parallel commercial operation was immediately suspended),
- 963km main line length,
**WuHan – GuangZhou Passenger Dedicated Line**

**Operation Simulation by IFB using OPEN TRACK**

![Diagram of Wuhan-Guangzhou line](image)

**Train Speed v = f(t)**

**Guangzhou direction non-stop, CRH 3**

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*IT10 Rail (2010-01-21)  Dipl.-Ing. (FH) Martin Jacob*
WuHan – GuangZhou Passenger Dedicated Line
Power Supply Simulation by IFB using OpenPowerNet

Busbar Voltage and Current, Wuhan-Guangzhou Substation ATS_1457_Hua, Transformer 1457_Hua_AT-01

Voltage [V]

Current [A]

Time

Substation No.

Maximum Substation Power
WGPDL - Operation Program 2028

Apparent Power [MVA]

Substation No.

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China Railways High Speed Network

Future Planning

“十一五”铁路网规划图
Operation- and Power Supply- Simulation Training
China Railway SIYUAN Survey and Design Group Co. Ltd

- One OpenTrack License for Route & Station Design Department
  - 11 days intensive training provided by IFB & OpenTrack Technology

- One OpenPowerNet & OpenTrack License for the Electrification Department
  - 15 days intensive training provided by IFB
  - 5 days technical intercommunication to discuss detailed problems of the electrical power supply provided by IFB
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