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From: <https://mail.google.com/mail/u/0/#search/China/FMfcgxwDrIRKITSPGHkKdBbZwwkBhQjq>

China: Start of construction of a 1000-km (620-mile) long Transrapid line in 2020

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The International Maglev Board <newsletter@maglevboard.net>

- Japan, South Korea and China are currently very active in the field of magnetic levitation technology as they invest heavily in research and development of practical magnetic levitation transportation systems.
- So-called hyperloop concepts (ultra-fast trains in vacuum tunnels) are still under discussion, especially in India, China and South Korea. However, these projects are highly controversial among experts, who doubt that many of the marketing promises can be fully attained in practice.
- In the development of high-speed magnetic railways, the People's Republic of China is competing with the ongoing Japanese Superconducting Maglev system with a new system employing advanced Transrapid-type technology.



PR China: Start of construction of a 620-mile long Transrapid line for 600 km/h to 1000 km/h in 2020

Work on the construction of a new, 1,000-km (620-mile) long magnetic levitation train (upgraded Transrapid maglev) in the People's Republic of China is to begin as early as 2020. According to official Chinese media, modernized Transrapid trains between the cities of Guangzhou and Wuhan are expected to run at an initial speed of 600 km/h. The new trains will be operated by the Chinese government. The journey time between the two cities will then be reduced from around 10 hours to just two hours with maglev technology. At the same time, the Transrapid line will be designed for a maximum speed of 1,000 km/h (620 mph) as a precautionary measure.

The prototype

Photo: <https://www.thatsmags.com/image/view/201909/maglev-train.jpg> (Accessed: 2019-10-05)

The 1,000-kilometer (620-mile) line will be built by the Wuhan-based China Railway Siyuan Survey and Design Group, a subsidiary of the state-owned CRCC China Railway Construction Corporation, reports Wuhan Evening News, citing the Chinese news site Thatsmag.com.

The CRRC Qingdao Sifang launched a state research and development program in July 2016 involving more than 30 Chinese companies, universities and research institutes to develop magnetic-levitation high-speed trains. In May 2019, China Railway Rolling Stock Corporation then unveiled a company-designed maglev prototype that is expected, after further development, to reach speeds of 600 km/h (375 mph). The company hopes to start series production of the new maglev system as early as 2021. Recent photos confirm the continuing close system relationship to the original German Transrapid design which has been operating in Shanghai since 2002. According to Chinese media reports, construction work will begin in the provincial capital of Wuhan, a city of 7.5 million inhabitants.

In the cockpit of the prototype.

Photo: http://www.globalconstructionreview.com/client_media/images/xmag_1.jpg.pagespeed.ic.qz8GNvj18G.jpg (accessed: 2019-10-05)

Additional considerations

Contradictory information exists on the question of the future use of superconducting materials. Jing Shiyuan, who was introduced in the Wuhan Evening News as an engineer of the state-owned company China Railway Construction Corporation, spoke of high-temperature superconductors, which should enable the magnetic railways to reach speeds of 1000 km/h (620 mph). He also said that the use of superconducting materials would be a problem. A corresponding project was started in 2015 and a model for tests was already produced in the following year. It can be assumed that such high travel speeds can currently only be achieved in tunnels with reduced air pressure (partial vacuum). Such concepts, so-called hyperloops, which are being discussed more intensively in South Korea, India and China, are highly controversial among experts with regard to practicability and costs.

In September 2019, the National Railway Administration in China published a series of technical standards for magnetic railways, which will apply from 2020. The standards define and standardize the basic technical specifications, including the track gauge, which still seems to comply with the original Transrapid standard.

China put its first maglev train into operation in 2002 using the German-developed Transrapid along a 30-kilometer (19-mile) line between Shanghai's Pudong International Airport and Longyang Road Station. Now more ambitious plans for the magnetic train seem to be taking shape.



Sources: Text based on: Wuhan Evening News, Global Construction Review and information from the International Maglev Board.

External link: CNN: <https://edition.cnn.com/travel/article/china-highspeed-maglev-prototype/index.html> (accessed: 2019-10-05)

External link: Global Construction Review: <http://www.globalconstructionreview.com/news/work-chinas-1000km-maglev-railway-begin-next-year/> (accessed: 2019-10-05)

External (Chinese-language) link: Wuhan Evening News: http://whwb.cjn.cn/html/2019-09/27/content_149951.htm (accessed: 2019-10-05)

External link: A short YouTube video of the public presentation of the new Chinese maglev train (approx. 1 min): <https://youtu.be/4WxZpVGNPN8>

Overview: Upcoming Maglev-Conferences



AIM 2020 Advances in Magnetics Conference, Moena, Italien, March 8 - 11, 2020
Information about AIM 2020: <http://www.aim2020.poliba.it>



ISMB17 Conference, Rio de Janeiro, Brazil, August 18 - 21, 2020
The 17th International Symposium on Magnetic Bearings (ISMB17) will be held, for the first time since its inaugural edition in 1988, in South America, in Rio de Janeiro, August 18 - 21, 2020.
Information about ISMB17 is at <http://ismb17.org/>



InnoTrans 2020, Germany, Berlin, September 22 - 25, 2020
InnoTrans is considered the most important international trade fair for transport technologies. It takes place every two years in Berlin.
Information about InnoTrans <https://www.innotrans.de/>



MAGLEV 2020 Conference in Changsha, PR China, October 2020
The 25th International Conference on Magnetically Levitated Systems and Linear Drives (MAGLEV 2020) will be held in Changsha, PR China, in October 2020.
Information about Maglev2020 will be announced in spring 2019 under <https://www.maglevboard.net/en/the-conferences>.

The International Maglev Board's conference website will keep you up-to-date:
»»» <https://www.maglevboard.net/en/the-conferences>



Research results:

The studies and results can be read free of charge as pdf.

Energy Consumption of Track-Based High-Speed Transportation Systems: Maglev Technologies in Comparison with Steel-Wheel-Rail, November 2018. (external link to researchgate.net)

Electromagnetic Fields of High-Speed Transportation Systems: Maglev Technologies in Comparison with Steel-Wheel-Rail, October 2018. (external link to researchgate.net)

Thank you for your time and interest.
Yours sincerely
The International Maglev Board

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