

Media Information
26 January 2024

'BMW Data Coach' on hand as World Championships start on home soil: German lugers in Altenberg again relying on digital optimisation of racing line and material.

+++ German Bobsleigh, Luge and Skeleton Federation (BSD) building on automotive measurement and analysis methods from technology partner BMW +++ Data-driven optimisation for set-up and racing line particularly valuable in Altenberg +++

Munich/Altenberg. This Friday sees the start of the 52nd FIL Luge World Championships in Altenberg (GER), supported by BMW as main partner. In front of a home crowd, the German team is aiming to build on its impressive record of successes at major events. In this respect, the BSD has been relying on support from technology partner BMW since 2010. In lugging, the technology transfer from automotive research, development and production focuses on data-driven optimisation of the complex system of luge, athlete, and racing line.

The 'BMW Data Coach' consists of sensors installed in the training sleds. These measure a range of dynamic data regarding longitudinal and lateral speed, acceleration and yaw rates, and deliver high-resolution recordings. The sensors work in tandem with bespoke analysis software for data evaluation, which can precisely reconstruct each run. This technology has long been an established part of motor racing and the BMW Group and the BSD have been working to refine its application for lugging since 2016. Thanks to the analysis of numerous runs on one and the same track, the steadily growing trove of data delivers increasingly accurate insights into the ideal material and the fastest individual racing line – as well as revealing dependencies on external conditions.

The software has been developed and optimized by multiple Junior World Luge Champion Dr. Julian von Schleinitz, who benefits from his experience as an athlete and his expertise as a data scientist at the BMW Group. At any moment between the start and finish of a run, the 'BMW Data Coach' is able to show the on-track position of the

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luge, the speed, acceleration, steering movements, drift and much more. It can also compare this data with other runs. "This allows us to recognise even the most minor steering errors and identify the ideal racing line, the most promising material and the perfect luge set-up," says von Schleinitz. "Getting the set-up just right and staying on the ideal line become more crucial for longer ice channels – and this year's World Championship track in Altenberg is very long."

Objective analysis reveals that the ideal line and the best material may not be the same for every athlete. Nonetheless, comparing datasets for two athletes is what leads to further key insights. Multiple Olympic and world champion Felix Loch has been working with the 'BMW Data Coach' for some time and Max Langenhan, currently topping the overall World Cup standings, started to use the technology this season. "The fact that Max and I are working together benefits us both," says Loch. "We can watch our races together on the computer in the most minute detail, which allows us to spot the best racing line and compare our materials."

Data collected thus far shows that Langenhan and Loch are following slightly different racing lines in Altenberg. These differences have been analysed in simulations ahead of the World Championships, allowing the athletes to draw their individual conclusions.

"Altenberg is a very sophisticated and varied track with a host of technical aspects. You can lose a lot of time between turn 1 and turn 18," says Langenhan. "That makes it all the more important to stay on the ideal line for the whole run and stamp out the little slips that you might not even notice on the luge, but which are clear for all to see in the data. The BMW Data Coach is already working like a world champion, and now we just have to turn that into results."

Today's sprint races will provide the first opportunity to do just that. Saturday will feature the medal races for the men's singles and

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women's and men's doubles. The World Championships wrap up on Sunday with the women's singles and the team relay.

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In 2022, the BMW Group sold nearly 2.4 million passenger vehicles and more than 202,000 motorcycles worldwide. The profit before tax in the financial year 2022 was € 23.5 billion on revenues amounting to € 142.6 billion. As of 31 December 2022, the BMW Group had a workforce of 149,475 employees.

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