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Innovative On-Site Continuous Production and Welding of the Einstein Telescope Vacuum Pipes

The Einstein Telescope will consist of 120 km of vacuum pipes with a diameter of 1 m to achieve the required design sensitivity. The *BeamPipes4ET* project introduces an innovative production concept for these vacuum pipes by manufacturing them on-site in the tunnels through a continuous process using coils of sheet metal. This minimizes the transportation needs - forming the key concept of this project. Additionally, the project investigates the use of seamless flanges for ultra-high vacuum applications and explores laser beam welding under mobile vacuum. These approaches enhance reliability while reducing labor costs, welding efforts, and finishing work. This poster presents the current status and ongoing activities of the BeamPipes4ET project.

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