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## **Preliminary Investigation of a Higgs Factory based on Proton-Driven Plasma Wakefield Acceleration**

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A Higgs Factory is considered the highest priority next collider project by the high-energy physics community. Very advanced designs based on radio-frequency cavities exist, and variations on this approach are still being developed. Recently, also an option based on electron-bunch driven plasma wakefield acceleration has been proposed. In this article, we discuss a further option based on proton-driven plasma wakefield acceleration. This option has significant potential advantages due to the high energy of the plasma wakefield driver, simplifying the plasma acceleration stage, and due to the breadth of particle physics research it will make possible. Its success will depend on further developments in producing compact high-energy proton bunches at a high rate.

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