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Mechanical displacement of the prototype chamber for the Korea-4GSR

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The Korea-4GSR storage ring vacuum chamber is composed of materials such as aluminum and stainless steel. Among these, the aluminum extruded chamber for Pill getter insertion undergoes in-situ bake-out and getter activation in the storage ring tunnel at a temperature of 180℃ for over 24 hours. The gap between the electromagnet and the vacuum chamber is as narrow as 1–2 mm, which could lead to physical interference between the magnet and the chamber due to thermal expansion caused by the bake-out process. Therefore, the displacement of the aluminum vacuum chamber due to temperature increase has been calculated and measured based on the position and type of supports. This presentation aims to discuss the optimization of the bellows and support designs for the aluminum vacuum chamber.

Footnotes

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