Contribution ID: **56** Contribution code: **A1** Type: **not specified**

Design and alignment accuracy of HEPS magnet girder adjustment mechanism

Wednesday 9 October 2024 08:35 (25 minutes)

The Very low emittance of High Energy Photon Source (HEPS) demands high stability and adjusting performance of the magnet support. The alignment error between girders should be less than 50 μm. Based on that, the adjusting resolution of the girder are required to be less than 5 μm in both transverse and vertical directions. Besides, the natural frequency of magnet support assembly should be higher than 54 Hz to avoid the amplification of ground vibrations. To meet the requirements, during the development of the prototype, the structure of the prototype was designed through topology optimization, static analysis, grouting experiments, dynamic stiffness test and modal analysis, and the rationality of the structure was verified through prototype experiments. During the field installation, the performance of the magnet support was again verified to be better than the design requirements through test work after installation.

Author: WANG, Zihao (IHEP)

Presenter: WANG, Zihao (IHEP)

Session Classification: Survey Concepts and strategy II