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Overview HEPS beam diagnostics and the efforts on beam instrumentation R&D

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High Energy Synchrotron Photon Source（HEPS）is an ultra-low emittance light source, of which the energy is 6 GeV and the beam current is 200mA. There are many challenges in hardware design and fabrication. As to beam instrumentation, sub-micron level beam position measurement system, synchrotron light measurement system based x-ray and the feedback system including FOFB, TFB and LFB should be considered firstly, furthermore, common instrumentation such as beam current measurement and beam loss monitors are also studied. Many efforts are made in home-made beam position electronics and synchrotron light measurement system based on KB mirror. The R&D status and discussion of those system will be reported in this paper. The preliminary design of HEPS instrumentation will be presented also.

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