Contribution ID: **51** Type: **Poster (including Speed Talk)**

Design of the next PCB-based BAM Demonstrator for ELBE

Thursday 26 June 2025 10:35 (3 minutes)

In 2023 a first demonstrator showed viability of a new pickup structure realized on a printed circuit board (PCB) for a bunch arrival-time monitor (BAM). Measurement shifts at ELBE validated the simulations and motivated the further pursuit of this approach. A few shortcomings were deliberately accepted to simplify production and increase the probability of successful measurement for the first demonstrator. Thus, a second demonstrator was designed and is currently manufactured. It will overcome most of the shortcomings, to further exploit the potential of the PCB-based BAM. It will allow for a higher bandwidth and provide a higher voltage signal compared to the existing demonstrator. Additionally, some practical problems found during construction and operation of the first demonstrator are tackled in the new design.

Summary

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Session Classification: Beam Diagnostics

Track Classification: Beam diagnostics