TARGET MONITORING SYSTEM FOR HERA-B EXPERIMENT. MULTI-TARGET OPERATION

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By using developed Target Monitoring System (TMS) the multiple wire mode operation has been investigated for four and eight targets. The HERA-B internal target consists out of eight target ribbons arranged around the beam. Each target can be moved in radial direction independently in sub-micron steps allowing to compensate relative beam shifts and to steer for the desired interaction rate. The experimental constraints require a stable interaction rate equally distributed over all inserted targets. The actual equalisation is based on a measurement of charge originated from the beam-target interaction. The TMS automatically controls a total interaction rate (IR) and performs an equal sharing among target wires by moving the target with respect to the beam. The system shows a good linearity with the interaction rate and allows a reasonable distribution of the interaction rate among several wires. To cross check the performance of the multiple wire mode steering the reconstructed tracks and primary vertices in the silicon vertex detector have been used.