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Diffusion of ions in gas medium

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Knowledge of the ion transport properties is not only required for the calculation of induced currents, the mobility and diffusion also enter the calculation of e.g. space charge evacuation. This is particularly important for TPCs with GEM readout operating in a high-rate environment, as envisioned by the Alice collaboration, where ions in the drift volume distort the tracks. Earlier, we investigated ion clustering and its impact on the mobility. In this talk, we report on the diffusion of ions in gas mixtures. This will enable us to produce a microscopic tracking model for ions.

Primary author: Mr KALKAN, YALÇIN (RD51)

Co-authors: VEENHOF, Rob (RD51); Ms ÖZDEMİR, Tuğba (Uludağ University); Mr KAYA, Yunus (Uludag University)

Presenter: Mr KALKAN, YALÇIN (RD51)

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