

Simulation Interests

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- Our group: CMS GEM & MPGD R&D for future High-Granularity Calorimeters and R&D on new MPGD structures
 - => Aspects of Triple-GEM detector physics: Gain, Signals, Discharges & Max-Gain, Alternatives to CF₄...
 - Discrepancy Sim/Data => Effect of ion space charge in holes
 - Need E-field update due to ion charge in holes + use of GPU
 - Benefit from new (hybrid) models for simulation of large avalanches
 - Improved Accuracy: Penning for Ternary Mixtures, Updated Ion Mobility
 - Microscopic Tracking for γ to simulate discharges?
 - New gases: alternatives to CF₄ for gas with high drift velocity e⁻
 - Aspects of operation under high background – Simulation of X-ray irradiation, ...
 - => Aspects of Resistive MPGD detector physics: Signals, Structures
 - Calculation of Static & Time-Dependent weighting fields
 - understand / design structures with highest charge-induction
 - Simulate signal waveforms
 - Simulation of Resistive structures ... change of E-fields due to slow charge evacuation
- Interest mostly in further development of GARFIELD++ as community tool
- Interest in teaching GARFIELD++ to newcomers
- Interest in following / advising developments in the future

Interests

Need to attract students – cannot cover all