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Finite element model of a calibration chamber

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**Abstract content
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A calibration chamber is a test tool in which the dc electric field strength and the air ion density created by Corona wires are both controlled. Positive Corona effect is modeled using Kaptzov's assumption and the driven equations are the coupled Poisson-Continuity equations. The FEM of the wire-to-plane configuration is validated using experimental and numerical results found in literature. Then the actual geometry of the calibration chamber, with both Corona and isolating grids is modeled and found in perfect agreement with the theory used for Multi Wire Proportional Chambers developed for Nuclear Physics.

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