



Investigation of Solid Velocity Measurement Using Single-Plane Versus Dual-Plane of Electrical Capacitance Tomography for Coal Power Plant Application

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Abstract. Electrical Capacitance Tomography (ECT) is a visualization tomographic modality that provides cross-sectional distribution information of any kind of multiphase flow. The paper aims to overcome the problems in the coal power plant which are sedimentation of pulverised coal in the piping system before entering boiler system and non-uniform of its velocity. A single plane and dual-plane experiment were carried out to measure the solid velocity of PMMA material. Eight electrodes for each plane was implemented in this research. The single plane ECT system was able to determine the average axial velocity of the PMMA ball as it can be applied manually if there is no expensive software was implemented. Besides, the velocity measurement using dual-plane ECT sensor through the application of Parseval's theorem and adaptation of