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What is the size of a floating sheath? An answer[1] FARINA VOIGT, SCHABNAM NAGGARY, RALF PETER BRINKMANN, Institute for Theoretical Electrical Engineering, Ruhr-University Bochum — The formation of a non-neutral boundary sheath in front of material surfaces is universal plasma phenomenon. Despite several decades of research, however, not all related issues are fully clarified. In a recent paper, Chabert pointed out that this lack of clarity applies even to the seemingly innocuous question "What the size of a floating sheath?" [Plasma Sources Sci. Technol. 23 (2014) 065042] This contribution attempts to provide an answer that is not arbitrary: The size of a floating sheath is defined as the plate separation of an equivalent parallel plate capacitor. The consequences of the definition are explored with the help of a self-consistent sheath model, and a comparison is made with other sheath size definitions.

[1]Deutsche Forschungsgemeinschaft within SFB TR 87

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