The geometric formulation of the covariant Phase Space with boundaries[1] JUAN MARGALEF-BENTABOL, Pennsylvania State University — In this talk, I will introduce the relative bicomplex framework, a new formalism which is the natural one to deal with the covariant phase space of theories with boundaries. I will show that it provides a formal equivalence between the relative version of a theory with boundary and the non-relative version of the same theory with no boundary. With these tools at hand, we can build over the space of solutions a (pre)symplectic structure canonically associated with the action. I will provide a brief summary of other geometric objects that can be derived, such as symmetries, Noether currents, and charges. Likewise, I will characterize the arbitrariness of these constructions which has been a matter of confusion in the past.

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Date submitted: 02 Nov 2020   Electronic form version 1.4