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**Kinetic Moments of Vlasov Dynamics: A Matched Pair Analysis**

**Oğul Esen<sup>1</sup>, Serkan Sütü<sup>2</sup>**

<sup>1</sup>Department of Mathematics, Gebze Technical University, Turkey,

<sup>2</sup> Department of Mathematics, Işık University, Turkey,

E-mails: oesen@gtu.edu.tr, serkan.sutlu@isikun.edu.tr

**Abstract**

This talk is based on [1]. We first present a gentle introduction to the Hamiltonian (Lie-Poisson) analysis of dynamical systems. Then we recast the dynamics of kinetic moments of Vlasov equation from the matched pair decomposition point of view. That is, we present the moment dynamics as a coupling of mutually interacting (Lie-Poisson) subdynamics. We observe that one of the constitutive subdynamics is the compressible isentropic fluid flow.

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