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Florian A Potra* (potra@umbc.edu), University of Maryland, Baltimore County, 1000 Hilltop Circle, Baltimore, MD 21250. *Weighted Complementarity Problems.*

The weighted complementarity problem (wCP) is a new paradigm in applied mathematics that provides a unifying framework for analyzing and solving a variety of equilibrium problems in economics, multibody dynamics, atmospheric chemistry and other areas in science and technology. It represents a far reaching generalization of the notion of a complementarity problem (CP). Since many of the very powerful CP solvers developed over the past two decades can be extended to wCP, formulating an equilibrium problem as a wCP opens the possibility of devising highly efficient algorithms for its numerical solution. For example, the Fisher competitive market equilibrium model can be formulated as a wCP, while the Arrow-Debreu competitive market equilibrium problem (due to Nobel prize laureates Kenneth Joseph Arrow and Gerard Debreu) can be formulated as a self-dual wCP. (Received January 26, 2014)