## AN APPLICATION OF THE ANALYTIC HIERARCHY PROCESS TO ENHANCING CONSENSUS IN MULTIAGENT DECISION MAKING

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## ABSTRACT

Ranking alternatives is a central issue in multi-criteria and multi-person decision making. Each member of a committee of experts has his own knowledge-base and a current information in order to make decisions. We assume the committee adopt the AHP as the tool that each expert uses to construct the personal ranking of alternatives. As described and formalized in (Carlsson et al., 1992; Eklund et al., 2007; Maturo, and Ventre, 2008) each decision maker is represented by a point of the Euclidean space R<sup>m</sup>, where the coordinates are the scores of the alternatives. Enhancing consensus in the group reduces to implementing a procedure that makes these points closer, so that they can be included in a suitably small neighborhood. In order to obtain consensus the more peripheral decision makers are invited by an impartial chairman, called *the Demiurge*, to modify their assessments. What seems to us worth to be considered is a further convergence procedure related to the weights of the criteria that in the first levels of the hierarchy induce the choices in the alternative set.

Keywords: multicriteria and multiperson decision making, AHP, consensus.

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