

**FROM EVOLUTIONARY TO STRATEGIC STABILITY**

Stefano DEMICHELIS<sup>1</sup> and Klaus RITZBERGER<sup>2</sup>

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**Abstract**

A component of Nash equilibria is (dynamically) *potentially stable* if there exists an evolutionary selection dynamics from a broad class for which the component is asymptotically stable. A necessary condition for potential stability is that the component's index agrees with its Euler characteristic. Second, if the latter is nonzero, the component contains a *strategically stable set*. If the Euler characteristic would be zero, the dynamics (which justifies potential stability) could be slightly perturbed so as to remove all zeros close to the component. Hence, any *robustly potentially stable* component contains equilibria which satisfy the strongest rationalistic refinement criteria.

**Keywords:** dynamic stability, evolutionary game theory, index theory, strategic stability.

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<sup>1</sup>CORE, Université Catholique de Louvain, Belgium. E-mail: stafano@core.ucl.ac.be

<sup>2</sup>Department of Economics and Finance, Institute for Advanced Studies, Vienna, Austria. E-mail: ritzbe@ihs.ac.at

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