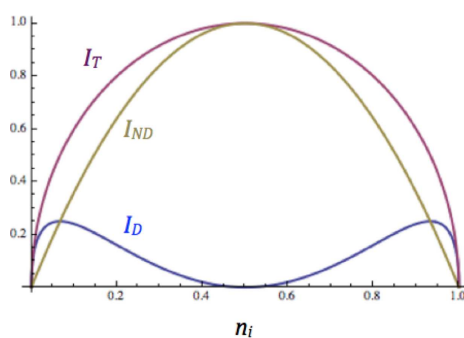


## A new index for electron correlation

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A deep understanding of electron correlation is crucial for the development of electronic structure methods, including natural orbital functional theory and new density functional approximations. When studying electron correlation it is useful to distinguish between two correlation types, dynamic electron correlation and static (or non-dynamic) electron correlation. In this work we propose a new index for electron correlation based on natural orbital occupancies that can be subdivided into a dynamic correlation and a static correlation part. The origin of these indicators comes from the concept of electron delocalization applied to a model system. We have studied the new indexes for a series of systems such as the isoelectronic He-like ions, the two-electron harmonium atom, the homolytic  $H_2$  dissociation profile, and  $H_4$ .



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