Hamilton Institute

ICA of fMRI ---and of Complex-valued--- Data

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Abstract

Independent component analysis (ICA), a data analysis method used for discovering hidden factors in sets of signals, has found a fruitful application in the analysis of functional magnetic resonance imaging (fMRI) data. A principal advantage of this approach for fMRI analysis is its applicability to cognitive paradigms for which detailed a priori models of brain activity are not available. In this talk, I will review the work on ICA of fMRI data and will give examples from our own work.

MRI data as well as many others such as radar and communications data are complex valued and treating them as such improves the performance of the analysis scheme, e.g., leading to increased sensitivity in ICA of fMRI. In this talk, I will also discuss complex-valued ICA approaches that use nonlinear functions, in particular the maximum likelihood approach to ICA.

Venue: Seminar Room, Hamilton Institute, Rye Hall, NUI Maynooth

Time: 1.00 - 2.00pm (followed by tea/coffee)

Travel directions are available at www.hamilton.ie

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