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Abstract

Aging associated brain decline often result in some kind of dementia. Even when this is a complex brain disorder a physical model can be used in order to describe its general behavior. A probabilistic model for the development of dementia is obtained and fitted to some experimental data obtained from the Alzheimer's Disease Neuroimaging Initiative. It is explained how dementia appears as a consequence of aging and why it is irreversible.

Keywords: Dementia, Cusp, Catastrophe Theory, Stochastic Process
PACS: 87.19.L, 87.19.xr, 87.85.dm, 87.10.Mn

1. Introduction

Dementia is a decline in mental ability, caused by damage to brain cells, that interferes with daily life. Activities of daily living are usually divided into basic and instrumental activities of daily living (IADL) [1, 2].

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