

Iterative methods of solving system of non-linear equations

Belén Perelló García ¹
Blanca Tordera Amorós ²
Lucía López Ribera ³

Double Degree in Mathematics and Engineering in Telecommunication Technologies and Services
- Universitat Politècnica de València

Description

A large group of mathematics is devoted to the implementation of iterative methods for solving systems of non-linear equations. This work is crucial, as these equations can model numerous physical, biological and even social phenomena that can finally be studied and even solved thanks to advances in this field.

This presentation is part of the assessment of a second year mathematics course and focuses on the analysis of a family of iterative methods. It will analyse their convergence, study their dynamical and parameter planes as well as a detailed analysis of their stability depending on certain parameters. Finally, it will be observed how it is possible to implement this family to solve specific systems of equations and thus verify the practicality of these studies for the resolution of real problems.

¹bpergar@teleco.upv.es

²btoramo@teleco.upv.es

³lloprrib@teleco.upv.es