

Topological methods in the study of nonlinear elliptic PDE'S

Cours présenté par le professeur **Jose Carmona TAPIA**, le lundi 11 mai, le mardi 12 mai et le 13 mai 2009 (de 8h30 à 11h30 et de 14h30 à 17h30).

Abstract: In this course we present a brief introduction to compact operators between Banach spaces and the Leray-Schauder topological degree for such compact operators. The next step is related with the local bifurcation results. We will study bifurcation from zero and bifurcation from infinity and we will obtain necessary and sufficient conditions for the existence of bifurcation points. We will show how conditions to assure the laterality of the bifurcation are sufficient conditions for the existence of solution for resonant problem. We will discuss here the global bifurcation theorem by Rabinowitz, as well as other continua results without bifurcation, that allow us to handle nonlinearities with asymmetric asymptotically linear behavior.

Le Directeur de l'Ecole Doctorale

Fethi NASR BEN EL HAJ AMOR