

# İSTANBUL ANALYSIS SEMINARS

## BROUWER AND LERAY-SCHAUDER DEGREE THEORY FOR OPERATOR EQUATIONS

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**Abstract:** Coincidence degree theory is a very powerful technique especially in searching for the existence of solutions of problems in nonlinear equations. Especially it has broad applications to the existence of periodic solutions of nonlinear differential equations. The main goal in the coincidence degree theory is to search the existence of solutions of the operator equation  $Lx = Nx$  in an open, bounded set  $\Omega$  in an arbitrary Banach space using Leray-Schauder degree theory, with  $L$  being a linear operator and  $N$  being a nonlinear operator. In this talk, with a brief introduction of Brouwer and Leray-Schauder degree theory, the definition of the coincidence degree will be given.

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