

## F.E.M. STUDY ABOUT THE USE OF THE D.C. SERIES MOTOR AS STARTER

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### Abstract

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The use of D.C. series motors as starters for vehicles and the increasing variety of classical and hybrid vehicles on the markets determined numerous analyses and simulations in order to establish the most proper design of the electrical machine for specific situations. Such a simulation of a D.C. series machine is presented in this paper. The analysis involved some situations starting from an armature current of  $0.25I_{an}$  to a current equal to  $2I_{an}$ . For each situation the electromagnetic torque and the air-gap flux density have been calculated for a subsequent determination of motor characteristics.

### Keywords

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Simulation, finite element method, series excitation D.C. motor, starter