



## **Radio controlled aircraft design according to the SAE AeroDesign competition requirements, and with validation through structural and aerodynamic analyzes**

*Deryck Machado Rangel<sup>1</sup>, Cláudia Márcia Ribeiro Machado Albernaz<sup>2</sup>*

*(1) PIBIC/ISECENSA Scientific Research Student – Mechanical Engineering Course; (2) Guiding Researcher – Mechanical Systems Analysis and Design Laboratory – LAPSIM/ISECENSA - Superior Education Institutes, Rua Salvador Correa, 139, Centro, Campos dos Goytacazes, RJ, Brazil.*

Currently, technological improvements have allowed great advances in the building of small scale aircrafts. These new technologies have introduced new testing possibilities which combine low cost and opportunities for a wide and flexible range of improvements and application velocity. Competitions such as the one promoted by SAE Aerodesign enable innovations and project improvements because of their multidisciplinary character that involves design, manufacture, planning, simulation and computational modeling tasks. Besides, thoughts regarding quality concepts and project management also involve students from other engineering fields, helping them exercise their entrepreneur capacities and fostering knowledge. The present work aimed to develop and design an aircraft that meets the requirements defined by the SAE Brazil Aerodesign competition regulations, with validation through structural and aerodynamic analysis. Then, after extensive research on theories, methods, regulations and benchmarking, the aircraft's conceptual, preliminary and detailed designs were made. Thus, it was our intention, with this work, to elaborate and validate a radio controlled aircraft project which meets all requirements for the SAE Aerodesign competition so that, in a further step, a prototype is built – and ISECENSA's first competition team is formed.

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