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Implementation of a new simulation strategy for a cooling study of large hydro generators

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Abstract

This paper gives an overview of fluid dynamics in electrical machines. A new computing model for electrical machines is presented which is basically derived from a pole section model (PSM). The reduced model, also called slot sector model (SSM), is a faster calculating method than the state-of-the-art PSM. The required fundamentals of the method and the grid generation are described too. Finally, 2 PSM's and 4 SSM's are presented and compared among each other to find the best adjustment of a reduced model.