AUTOMATED GEAR TRAIN MODELING IN CAD ENVIRONMENT

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Summary: *This paper presents a practical way of modeling gears using current CAD software tools. To automate the modeling process the parametric approach was used, which is applied to the modeling of certain elements, and the modeling of the gear assembly. Connectivity parameters of certain parts of the gear are much easier and faster to process modeling. This approach enables quick and easy creation of different variants of the model of gear transmission, which could be the basis for the optimization and automation of the complete design process. CAD transmission models, obtained by the proposed method can be used for different types of analysis and such work can create complete structural models and complete product documentation. The proposed approach is illustrated with practical examples that show significant improvements in the speed and quality of creating CAD models compared to the conventional approach.*
Keywords: *Automated modeling, gear trains, CAD, parameterization*

1. INTRODUCTION

Computer applications are nowadays indispensable segment of research and engineering practice. Front of engineers and researchers placed an increasing number of CAD software and other engineering tools. In order for the field of research to be attractive, it is necessary to respond to the trend of technological development. CAD software have been largely implemented in all developmental stages, but the tools and capabilities of CAD software and the necessary engineering knowledge and further push the boundaries and require ongoing interaction with the user.

Automated modeling in CAD environment is a very attractive topic for many researchers [1]. Using the parameters in order to create models of parts and assemblies, creating a family of elements process represents the wish to simplify and shorten the construction duration of this process. In order for this process to be successful it is necessary to properly define the parameters, limitations, and their

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