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Computer Aided Assembly Attributes Retrieval Methods for Automated Assembly Sequence Generation

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Abstract : Achieving an appropriate assembly sequence needs deep verification for its physical feasibility. For this purpose, industrial engineers use several assembly predicates; namely, liaison, geometric feasibility, stability and mechanical feasibility. However, testing an assembly sequence for these predicates requires huge assembly information. Extracting such assembly information from an assembled product is a time consuming and highly skillful task with complex reasoning methods. In this paper, computer aided methods are proposed to extract all the necessary assembly information from computer aided design (CAD) environment in order to perform the assembly sequence planning efficiently. These methods use preliminary capabilities of three-dimensional solid modelling and assembly modelling methods used in CAD software considering equilibrium laws of physical bodies.

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