Tolerance Analysis of Sheet Metal Assemblies with Focus on Non-Rigid Geometry

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Abstract. Tolerance analysis is nowadays a modern and efficient tool to simulate toleranced assemblies. As a result the designer gets the closing tolerance as well as to the priority of influencing tolerances. The closing tolerance can be calculated in worst-case or in statistical manner. These methods and tools have in common that only rigid, non-deformable geometry can be integrated. Many application cases in industry have tolerances as well as the influence of elastic deformations of components to be considered. Effects as spring-back of deformed components for assembly are reality. In this paper a method will be presented which allows a tolerance analysis of non-rigid geometry, especially for sheet metal assemblies.