Computing Welding Distortion: Comparison of Different Industrially Applicable Methods

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Abstract. Welding distortion is one of the major concerns of the industrial joining practice. In order to obtain optimal welding parameters many experiments have to be carried out. Numerical simulation enables a virtual examination of the welding distortion without performing expensive experiments. In this contribution some industrially applicable methods of weld modeling are discussed. They enable the fast distortion assessment in the pre-development stage. The application of these methods on a complex automotive part is conducted followed by a comparison of computed distortion with measured values. Furthermore, aspects of integration of weld modeling into the virtual product chain are addressed.