

Title (en)

METHOD AND APPARATUS FOR PROVIDING A SIMULATION OF A WELDING PROCESS USING INTEGRATED MODELS

Title (de)

VERFAHREN UND VORRICHTUNG ZUR SIMULATION EINES SCHWEISSVERFAHREN MITTELS INTEGRIERTEN MODELLEN

Title (fr)

PROCEDE ET APPAREIL DE SIMULATION D'UN PROCESSUS DE SOUDAGE AU MOYEN DE MODELES INTEGRES

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Application

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Abstract (en)

[origin: WO0130532A1] A method and apparatus for providing a simulation of a welding process using integrated models (100) which are interconnected by an interconnection tool (114) to determine stresses and distortions of a material being welded. The method and apparatus includes determining a model of a geometry of a set of materials to be welded, defining a set of coordinates of elements and nodes of the geometry model (102) for a finite element analysis mesh, delivering the finite element analysis mesh coordinates to a thermal analysis model (106), the thermal analysis model (106) including an analytical solution model (108) and a finite element analysis model (110), and determining a thermal analysis of the welding process, the thermal analysis responsively providing a thermal history of the welding process. The method and apparatus further includes delivering the thermal history of the welding process to a structural analysis model (112), and providing a structural analysis of the welding process as a function of the thermal history.

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