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Nota di contenuto	Mechanical Stress Evaluation by Neutrons and Synchrotron Radiation VII; Preface and Organizing Committee; Table of Contents; Study of Microstructure, Texture and Residual Stress in Asymmetrically Rolled Titanium; Improving Beamtime Efficiency for Residual Stress Neutron Experiments; Engineering & Related Studies at J-PARC; The Role of Metallurgical Solid State Phase Transformations on the Formation of Residual Stress in Laser Cladding and Heating; Quantification and Prediction of Residual Stresses in Creep Crack Growth Specimens A Mirror Furnace for In Situ Residual Stress Measurements by Neutron DiffractionThermal-Effect Study on a Carbon-Carbon Composite Using Synchrotron X-Ray Measurements & Molecular Dynamics Simulation; Residual Stress Distributions at High Strength Steel Welds Prepared by Low Transformation Temperature (LTT) and Conventional Welding Consumables; A Validated Numerical Model for Residual Stress Predictions in an Eight-Pass-Welded Stainless Steel Plate; Load-Sharing in -Processed Inconel 718; Measurement of Forming Stresses in Plain Spherical Bearings Using Neutron Diffraction Study of Asymmetric Rolling of Titanium by the Finite Elements Method with Implemented Crystalline ModelNeutron Texture Diffractometer at China Advanced Research Reactor; Residual Stresses Associated with

the Production of Coiled Automotive Springs; Residual Strains in ITER Conductors by Neutron Diffraction; Neutron Diffraction and Acoustic Emission Study of Mg-Al-Sr Alloy Reinforced with Short Saffil® Fibers Deformed in Compression; Neutron Diffraction Residual Stress Measurements in Electron Beam Welded Compact Tension Specimens
Influence of Beam Divergence on Pseudo-Strain Induced in Time-of-Flight Neutron DiffractionDemonstration of near Field High Energy X-Ray Diffraction Microscopy on High-Z Ceramic Nuclear Fuel Material; In Situ Three-Dimensional Orientation Mapping in Plastically-Deformed Polycrystalline Iron by Three-Dimensional X-Ray Diffraction; Measurement of Residual Stresses in Titanium Aerospace Components Formed via Additive Manufacturing; Micromechanical Behavior of Solid-Solution-Strengthened Mg-1wt.%Al Alloy Investigated by In Situ Neutron Diffraction
Strain and Texture Investigations by Means of Neutron Time-of-Flight Diffraction: Application to Polyphase GneissesCrystal Plasticity Finite Element Analysis Based on Crystal Orientation Mapping with Three-Dimensional X-Ray Diffraction Microscopy; Temperature Induced Internal Stress in Carrara Marble; Internal Stress Measurement of Weld Part Using Diffraction Spot Trace Method; The New Materials Science Diffractometer RSD at CIAE; Characterization of Thermally Stable Diamond Composite Material; Investigation of Residual Stresses Distribution in Titanium Weldments
Evaluation of Ductile Damage Progress of Aluminum Single Crystal with Prior Activity of Single Slip System under Tensile Loading by Using Synchrotron White X-Ray

Sommario/riassunto

The collection shows the importance of neutron and synchrotron radiation in the evaluation of mechanical stresses. It gathers the current knowledge from those concerned with the mechanical stress evaluation of materials and components using neutron and synchrotron radiation. It also gives an interesting ""snap-shot"" of progress in the field. The wide array contributions focus on the following key topics: Stress evaluation using neutrons, synchrotron radiation and X-rays; Development of measurement methods and instrumentation; Material processing and residual stresses; The influence of residua