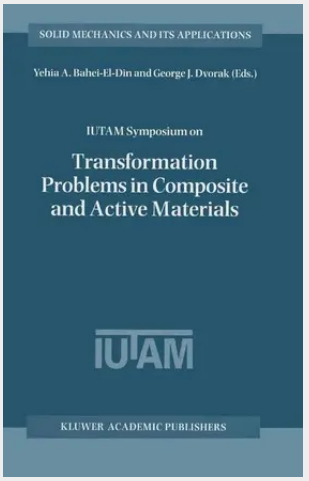
Bahei-El-Din / Dvorak

IUTAM Symposium on Transformation Problems in Composite and Active Materials

Proceedings of the IUTAM Symposium held in Cairo, Egypt, 9-12 March 1997

The field of composite materials has seen substantial development in the past decade, New composite systems are being continually developed for various applications. Among such systems are metal, intermetallic, and superalloy matrix composites, carbon-carbon composites as well as polymer matrix composites. At the same time, a new discipline has emerged of active or smart materials, which are often constructed as composite or heterogeneous media and structures. One unifying theme in these diverse systems is the influence that uncoupled and coupled eigenfields or transformation fields exert on the various types of overall response, as well as on the respective phase responses. Problems of this kind are currently considered by different groups which may not always appreciate the similarities of the problems involved. The purpose of the IUTAM Symposium on Transformation Problems in Composite and Active Materials held in Cairo, Egypt from March 10 to 12, 1997 was to bring together representatives of the different groups so that they may interact and explore common aspects of these seemingly different problem areas. New directions in micromechanics research in both composite and active materials were also explored in the symposium. Specifically, invited lectures in the areas of inelastic behavior of composite materials, shape memory effects, functionally graded materials, transformation problems in composite structures, and adaptive structures were delivered and discussed during the three-day meeting. This book contains the printed contributions to the IUTAM Symposium.

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