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PREFACE

NATALE MANGANARO [a*] AND TOMMASO RUGGERI [b]
(Guest Editors)

Giuseppe Grioli was born in Bordonaro, a small village in the surroundings of Messina, on April 10th 1912.

He graduated with honors first in Physics and later in Mathematics from the University of Messina. Then Renato Einaudi, his supervisor, suggested him to move to Rome where he met Antonio Signorini who soon recognized him to have an exceptional aptitude for research. Einaudi and Signorini introduced the young Grioli to Mauro Picone who was the founder and director of the Istituto Nazionale per le Applicazioni del Calcolo (INAC) of the Consiglio Nazionale delle Ricerche (CNR) in Rome. In 1938 Grioli was called for an interview by Picone and immediately took the place vacated by Wolfgang Gröbner.

In Rome Grioli had the opportunity to meet with many mathematicians as Amaldi, Segre, Severi, Fantappi, Bompiani, Conforto and to work with Tolotti, Ghizzetti and especially with Fichera who became a very good friend of him.

In 1949 he was appointed full professor of Rational Mechanics at the University of Cagliari but in the same year he was given a chair at the University of Padua where he worked for all his carrier. Since 1968 he was Dean of the Faculty of Sciences for seven years during the youth protest period. After his retirement he was appointed Professor Emeritus of the University of Padua.

In 1969 he was appointed member of Accademia Nazionale dei Lincei and nowadays he is the doyen of the academic section of Mechanics and Applied Mathematics.

He is member of many scientific academies and institutes and he was in particular for many years in the Scientific Committee and also President of the Gruppo Nazionale per la Fisica Matematica (GNFM) of the CNR.

For his research activity in 1973 he was awarded the Premio Linceo for Mathematics, Mechanics and Applications.

Among several research fields developed by Grioli we mention: the dynamics of rigid bodies and in particular the determination of a special precessional motion which is now universally known as Grioli's precession; the non-linear extension of the so called Cosserat Continua in which the couple stress is taken into account while the stress is not anymore symmetric (asymmetric theory); several contributions in non linear elasticity with a priori inequalities for stress, limit of rigid body as limiting case of deformed ones, etc.. The scientific activity of Grioli had an international echo also because Clifford Truesdell recognized soon the importance of his researches and in general of the Signorini School

and he diffused their results (mainly written in italian) in the famous volumes published in the Handbuch der Physik . Truesdell invited Grioli to write a book in the Springer series of Natural Philosophy , "Mathematical Theory of Elastic equilibrium"(1962) which is still considered a reference book for all people working in Continuum Mechanics.

Grioli created an appreciated school and many of his pupils reached the chair in Mathematical Physics

As far as the didactics is concerned, his textbook Lezioni di Meccanica Razionale is still adopted in many Italian universities.

The Department of Mathematics of University of Messina celebrated Professor Grioli in occasion of his 100th birthday organizing the scientific meeting *"Giornate di Studio sui Modelli della Meccanica dei Continui"* held from April 13th to 14th 2012 under the auspices of University of Messina, Gruppo Nazionale per la Fisica matematica (GNFM) and Accademia Peloritana dei Pericolanti to which Professor Grioli is a member. Some of the contributions here collected were presented during the conference.

The present book aims at celebrating the professional activity of Professor Grioli in the occasion of his 100th birthday. We thank all the colleagues who enthusiastically joined this initiative. This is the best proof of the high esteem and respect addressed to Professor Grioli by the international scientific community.

Professor Giuseppe Grioli

[a] University of Messina
Department of Mathematics and Informatics
Viale F. Stagno d'Alcontres 31
98166 Messina, Italy

[b] University of Bologna
Department of Mathematics & Research Center of Applied Mathematics (CIRAM)
Via Saragozza 8
40123 Bologna, Italy

* Email: nmanganaro@unime.it

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