

# Editoria - settembre 2019

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## Il Nuovo Saggiatore

Il nuovo numero de *Il Nuovo Saggiatore*, Vol. 35, n. 3-4 (2019) è **online**.

Il numero si apre con un ricordo del collega e amico Guido Piragino, già Consigliere SIF e Socio Benemerito.

Inoltre, in questo numero troverete interessanti articoli su

- Cosmic rays (A. De Angelis)
- Multiquark hadrons (A. D. Polosa)
- Italian quantum backbone (D. Calonico, C. Clivati)
- High-resolution Resonant Inelastic soft X-ray Scattering (RIXS) (L. Braicovich, G. Ghiringhelli)
- The incomplete revolutions of string theory (A. Sagnotti)
- The 1919 total solar eclipse (A. Bettini) (articolo in libera consultazione nello spazio **online** "free to read" de *Il Nuovo Saggiatore*)

Nella rubrica *Il Nostro Mondo* sono presentati il programma generale del 105° Congresso Nazionale della SIF, presso il Gran Sasso Science Institute a L'Aquila, e quello del Simposio Internazionale "Passion for Science", presso l'Accademia delle Scienze di Bologna. Sempre all'interno di questa rubrica, due articoli di recente interesse: "Lunar renaissance" di P. Caraveo e "Earthquakes in Italy: why can't we defend ourselves" di A. Amato. In chiusura, una recensione estesa, a firma di U. Bottazzini, del volume recentemente edito dalla SIF "I Fisici Senatori 1848-1943" di M. Leone e N. Robotti.

**Il Nuovo Saggiatore è fruibile online e su APP per tutti i soci in regola.**



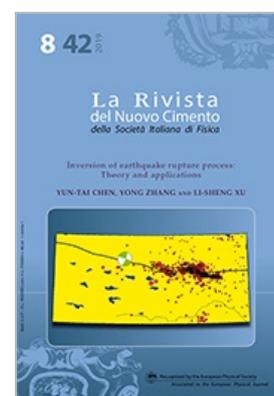
## La Rivista del Nuovo Cimento Vol. 42 N. 8 (2019)

### Inversion of earthquake rupture process: Theory and applications

*Yun-tai Chen, Yong Zhang, Li-sheng Xu*

The response of the authorities and of the public to an earthquake, especially if of relevant magnitude, should be as timely and as informed as possible. To this aim Yun-tai Chen, Yong Zhang and Li-sheng Xu have been working in the last two decades and more. The inversion methods have been constantly improved, to make the inversion of earthquake rupture process efficiency higher and more robust, and to apply their method to promote our understanding of earthquake phenomena and a rapid emergency response. Nowadays only around two hours are needed to accomplish an inversion of earthquake rupture process while three to five hours were required in 2010.

The methods discussed in this review have been applied to over 70 significant earthquakes across the world for rapid emergency response since 2008. The applications show that the methods prove



to be effective in the earthquake emergency response, and the results may be used to reduce the losses caused by the earthquakes.

### EPJ E – Highlights

#### **Electrical stimulation of developmental forces reveals the mechanism of limb formation in vertebrate embryos**

*V. Fleury, A.V. Murukutla*

Every vertebrate, whatever its eventual form, starts embryonic life in the same way – as a hollow ball or disc of cells called a blastula. In theory, knowing the mechanism through which the blastula is formed into the shape of an animal could help correct defects and even, one day, regenerate body parts. But evolution and genetics are of little help in understanding this process. Now, however, Vincent Fleury and Ameya Vaishnavi Murukutla from Université Paris Diderot, Paris, France have used experiments with chicken embryos to propose a mechanism for vertebrate limb formation. These findings have been published in the journal EPJ E.



### EPJ Plus – Highlights

#### **The National Museum of Colombia's "Francisco Pizarro's Banner of Arms": a multianalytical approach to help uncovering its history**

*D.A. Badillo-Sanchez, C.B. Dias, A. Manhita, N. Schiavon*

#### **Dating of a unique six-colour relief print by historical and archaeometric methods**

*A. Sodo, L. Ruggiero, S. Ridolfi, E. Savage, L. Valbonetti, M.A. Ricci*

As any historian will tell you, we can rarely take the claims made by our ancestors at face value. The authenticity of many of the artefacts which shape our understanding of the past have been hotly debated for centuries, with little consensus amongst researchers. Now, many of these disputes are being resolved through scientific research, including two studies recently published in EPJ Plus. The first of these, led by Diego Armando Badillo-Sanchez at the University of Évora in Portugal, analysed an artefact named 'Francisco Pizarro's Banner of Arms' – believed to have been carried by the Spanish conquistador during his conquest of the Inca Empire in the 16th century. The second team, headed by Armida Sodo at Roma Tre University in Italy, investigated a colour print of Charlemagne – the medieval ruler who united much of Western Europe – assumed to be from the 16th century.

