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Econofisica e Reti Complesse

Observatory of **C**omplex **S**ystems

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Il gruppo di ricerca attualmente

Rosario N Mantegna

Salvatore Micciché

Luca Marotta

Federico Musciotto

Christian Bongiorno

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Tematiche di ricerca:

- Reti finanziarie ed economiche (es: mercato interbancario, mercato del credito);

- Reti sociali (monitorate attraverso reti di comunicazione);

- Reti socio-tecniche (il sistema del controllo aereo);

- Comportamenti individuali indagati con gli strumenti delle reti complesse (profili di investimento di individui).

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Quantifying preferential trading in the e-MID interbank market

VASILIS HATZOPOULOS†, GIULIA IORI†‡, ROSARIO N. MANTEGNA§¶, SALVATORE MICCICHÈ*¶ and MICHELE TUMMINELLO‖

†Department of Economics, School of Social Science, City University London, London, UK
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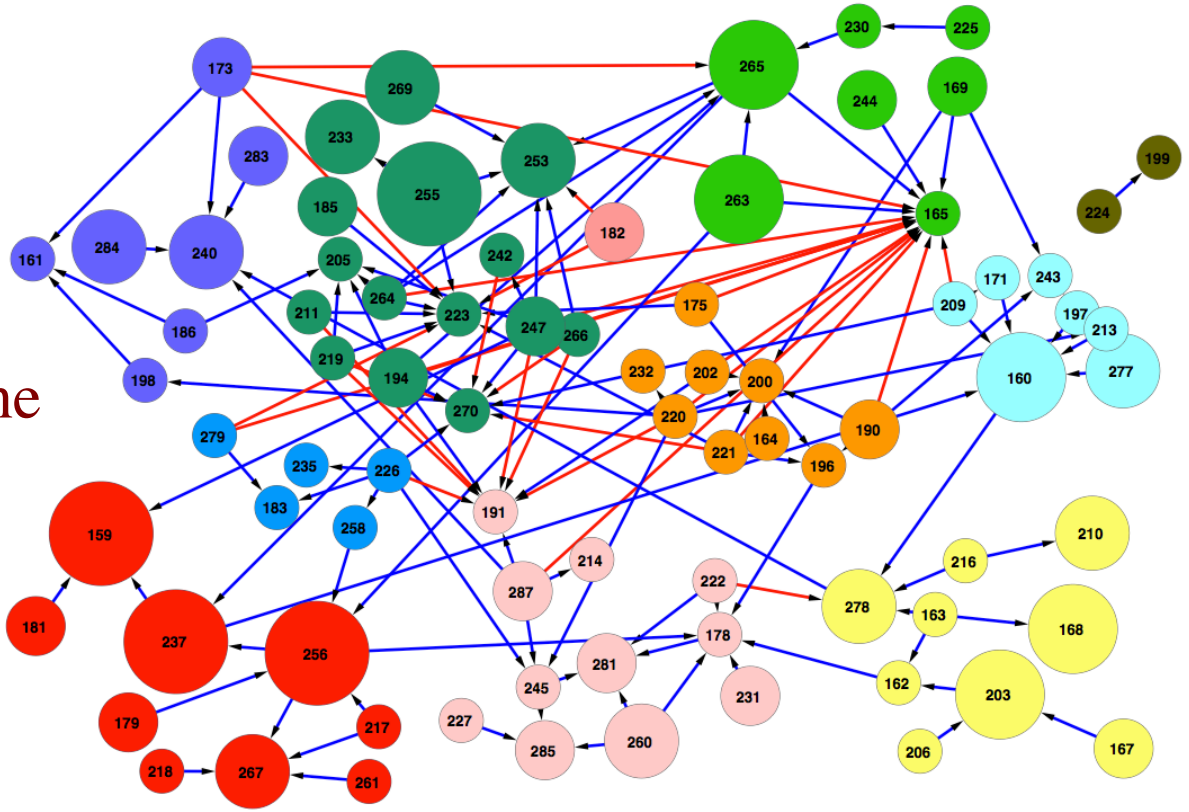
Quantitative Finance, 2015
Vol. 15, No. 4, 693–710, http://dx.doi.org/1

Relazioni di credito sovra-espresse e sotto-espresse tra le banche agenti nel mercato interbancario e-MID



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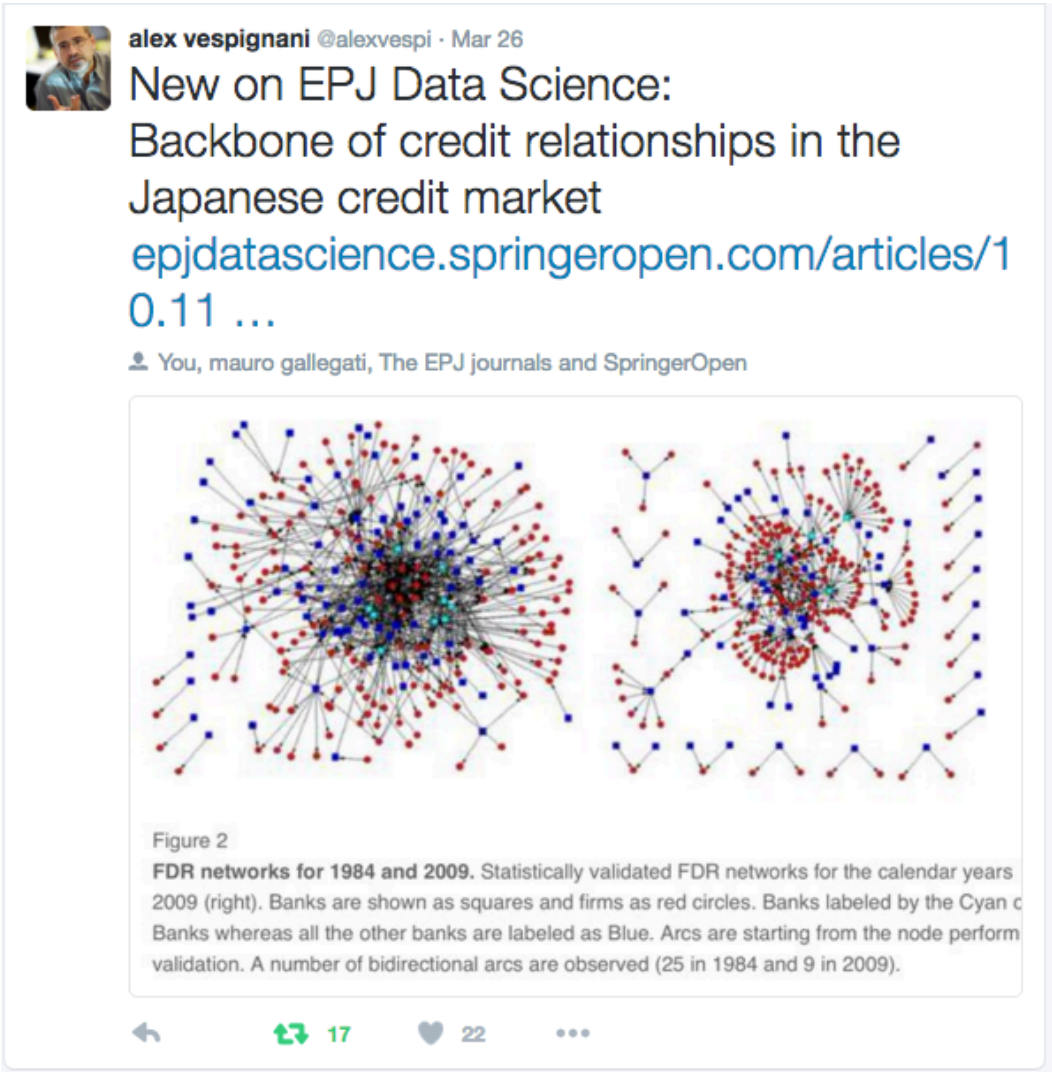
Backbone of credit relationships in the Japanese credit market

Luca Marotta[1], Salvatore Micciché[1], Yoshi Fujiwara[2], Hiroshi Iyetomi[3], Hideaki Aoyama[4], Mauro Gallegati[5] and Rosario N Mantegna[1,6*]

Marotta et al. *EPJ Data Science* (2016) 5:10
DOI 10.1140/epjds/s13688-016-0071-7



alex vespignani @alexvespi · Mar 26

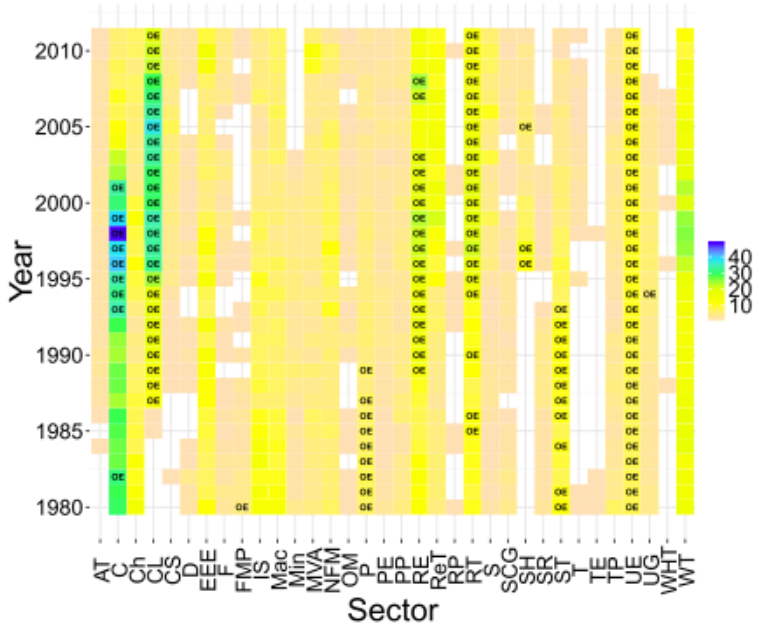
New on EPJ Data Science: Backbone of credit relationships in the Japanese credit market epjdatascience.springeropen.com/articles/10.11 …

You, mauro gallegati, The EPJ journals and SpringerOpen

Figure 2

FDR networks for 1984 and 2009. Statistically validated FDR networks for the calendar years 2009 (right). Banks are shown as squares and firms as red circles. Banks labeled by the Cyan c Banks whereas all the other banks are labeled as Blue. Arcs are starting from the node perform validation. A number of bidirectional arcs are observed (25 in 1984 and 9 in 2009).

17 22

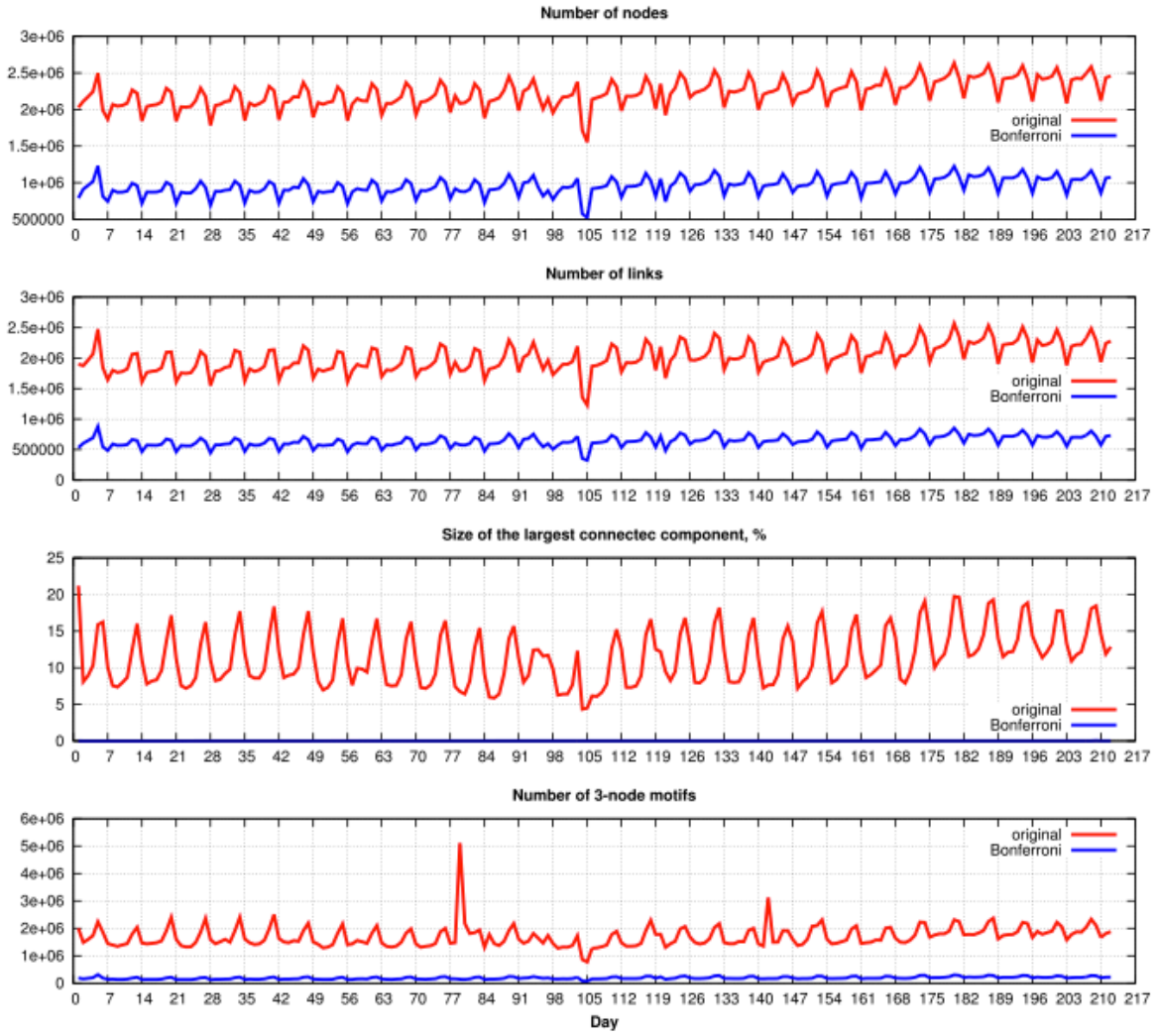


Statistically validated mobile communication networks: the evolution of motifs in European and Chinese data

Ming-Xia Li[1], Vasyl Palchykov[2,3,4], Zhi-Qiang Jiang[1], Kimmo Kaski[2], János Kertész[2,5], Salvatore Miccichè[6], Michele Tumminello[7], Wei-Xing Zhou[1] and Rosario N Mantegna[5,6,8]

New Journal of Physics **16** (2014) 083038

Time evolution of some basic network indicators for the daily networks obtained from MCRs of the European dataset.



Multi-Scale Analysis of the European Airspace Using Network Community Detection

PLOS ONE May 2014 | Volume 9 | Issue 5 | e94414

Gérald Gurtner[1], Stefania Vitali[2], Marco Cipolla[2], Fabrizio Lillo[1,2,3]*, Rosario Nunzio Mantegna[2,4], Salvatore Micciché[2], Simone Pozzi[5]

1 Scuola Normale Superiore, Pisa, Italy, **2** Dipartimento di Fisica e Chimica, Università degli Studi di Palermo, Palermo, Italy, **3** Santa Fe Institute, Santa Fe, New Mexico, United States of America, **4** Center for Network Science and Department of Economics, Central European University, Budapest, Hungary, **5** Deep Blue s.r.l., Roma, Italy

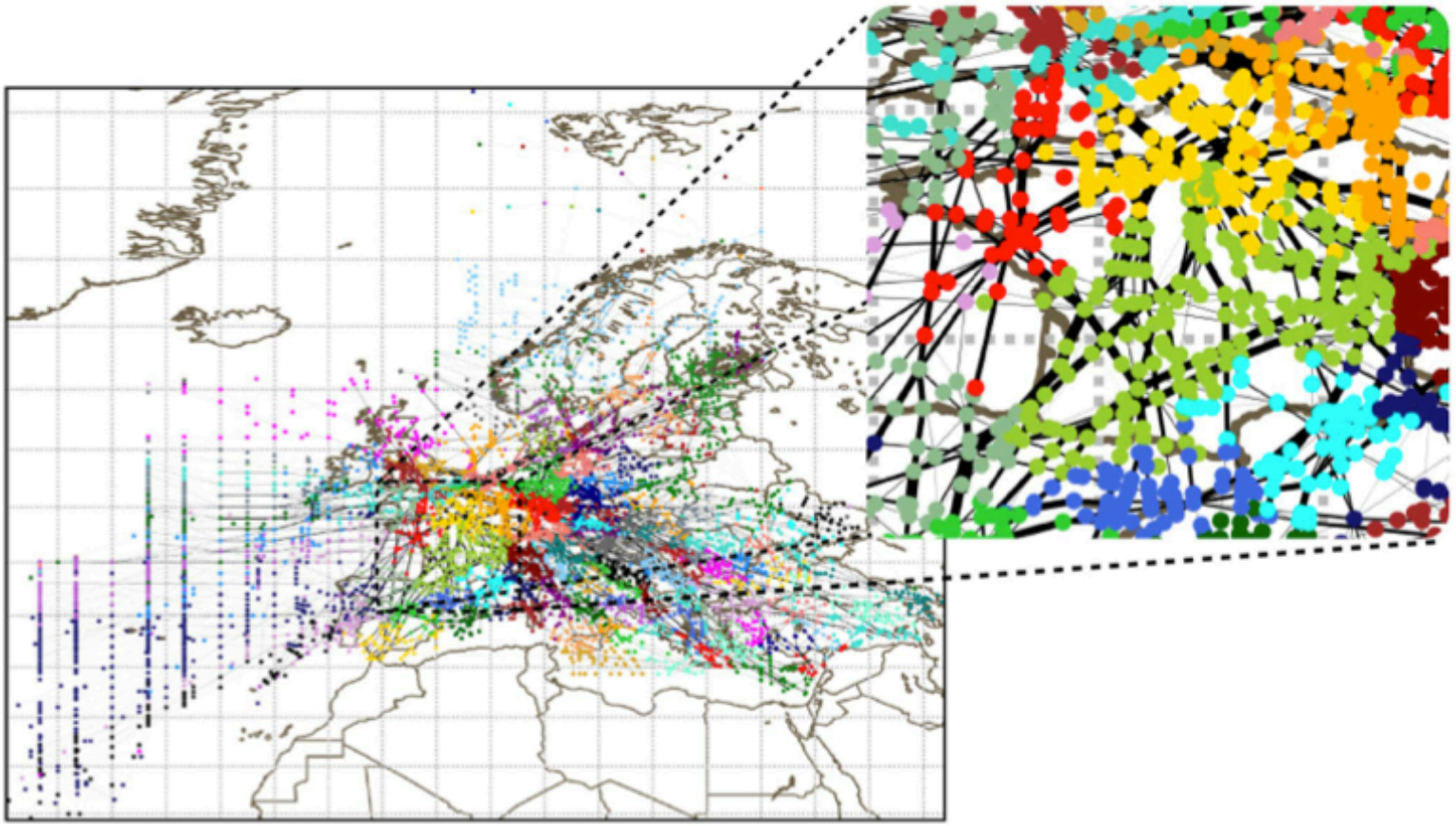


Figure 2. Communities obtained with the OSLOM algorithm on the network of navpoints for May 6, 2010. Each color corresponds to a different community.

doi:10.1371/journal.pone.0094414.g002

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Patterns of trading profiles at the Nordic Stock Exchange. A correlation-based approach.

Chaos, Solitons and Fractals xxx (2016) xxx–xxx

Federico Musciotto[a], Luca Marotta[a], Salvatore Micciché[a], Jyrki Piilo[b], Rosario N. Mantegna[a,c,*]

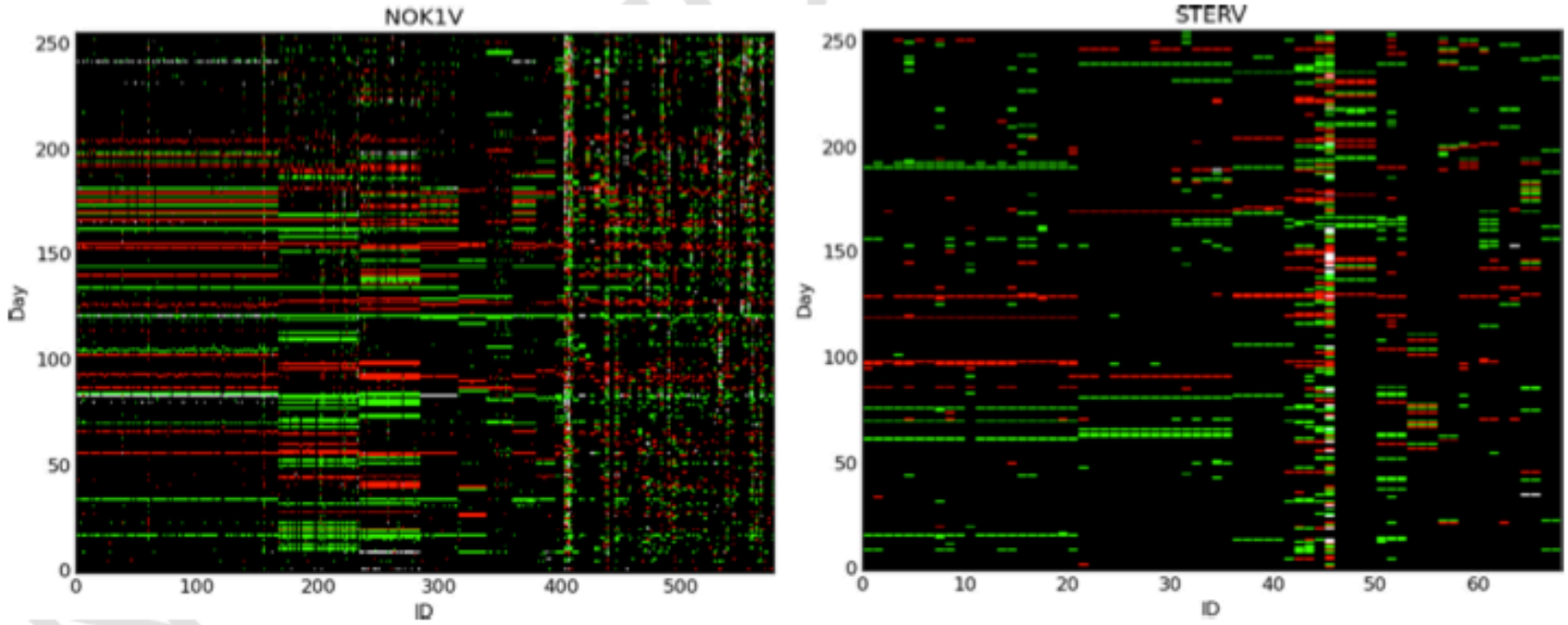

Fig. 5. Color code representation of the trading profile of investors trading the Nokia (left) and the Stora (right) stocks. In the horizontal axis we order different investors whereas the vertical axis is time (in number of trading days). The left panel shows trading profiles of the 576 Nokia investors whose trading co-occurrences were statistically validated with the Bonferroni correction whereas the right panel shows to the 67 Stora investors validated with the FDR correction. A red spot indicates a buy action, a green spot a sell action and a white spot a buy/sell action. Black spots indicate absence of trading. Different trading profiles are easily detectable especially for large clusters. (For interpretation of the references to color in this figure legend, the reader is referred to the web version of this article.)

Principali progetti recenti:

- Progetto dell' Institute for New Economic Thinking
“New tools in the credit network modeling with agents’ heterogeneity”

- Progetto EU FP7
“Complexity Research Initiative for Systemic InstabilitieS”
(CRISIS) 2011-2013.

- Progetto ELSA
Empirically grounded agent based models for the future ATM scenario
Progetto finanziato da SESAR-JU http://www.sesarju.eu
che è una partnership tra EUROCONTROL e l'Unione Europea.

- Progetto Complex World
Complex World Network: mastering complexity safely
Progetto finanziato da SESAR-JU

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Visiting students accolti recentemente:

- Vidushi Adlakha - Delhi Technological University, Delhi, India
2 Maggio - 31 Luglio 2015.

- Amitanshu Gupta, Indian Institute of Technology(IIT), Kanpur, India 12 Maggio - 31 Luglio 2015.

- András London, University of Szeged, Szeged, Hungary
Erasmus +, student 7 Giugno – 9 Agosto 2015

- Martin Rosolanka, Palacky University in Olomouc, Czech Republic.
Erasmus + student, Settembre 2015 – Giugno 2016

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Esempi di tematiche di ricerca per tesi di laurea:

ECONOFISICA

Giuseppe Buccheri - Correlation filtering procedures in financial markets. A detailed analysis of the US equity market. Tesi di Laurea Magistrale. Scuola Superiore di Catania. Classe delle Scienze Sperimentali. Giugno 2014

RETI COMPLESSE

Christian Bongiorno – Complex network structure of financial news. Tesi di Laurea Magistrale. Corso di Laurea in Fisica. Università degli Studi di Catania. Novembre 2012.

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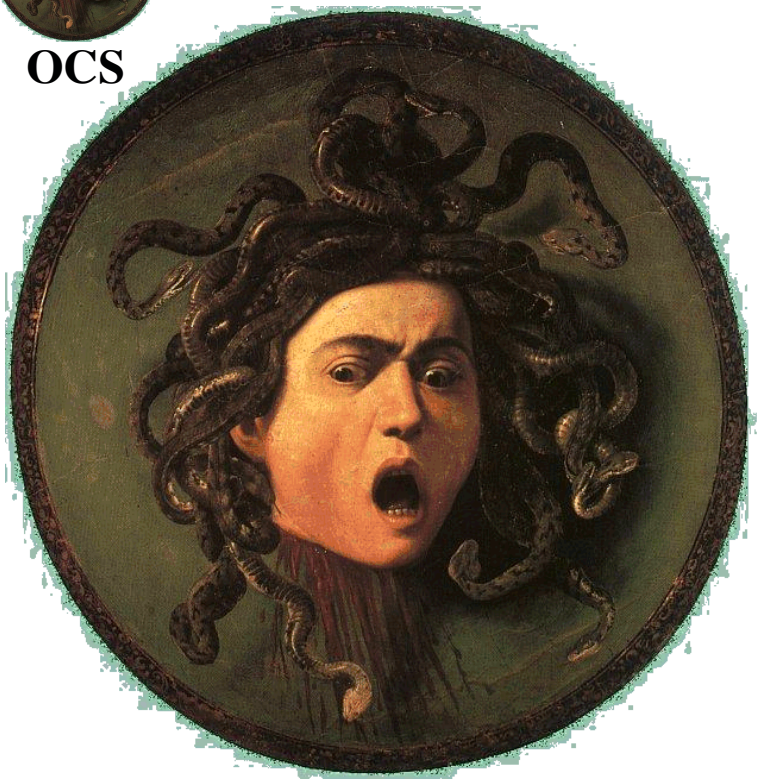

Michelangelo Merisi
da Caravaggio
Head of Medusa (1598)
Uffizi gallery

"The only hero able to cut off Medusa's head is Perseus, who flies with winged sandals. ..... . To cut off Medusa's head without being turned to stone, Perseus supports himself on the very lightest of things, the winds and the clouds, and fixes his gaze upon what can be revealed only by indirect vision, an image caught in a mirror. I am immediately tempted to see this myth as an allegory on the poet's relationship to the world, a lesson in the method to follow when writing."

Italo Calvino, Six Memos for the Next Millennium
Vintage Books, Random House, New York 1988

OCS website: http://ocs.unipa.it