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BOOK OF ABSTRACT

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**UNIVERSITÀ
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Novel plasma properties such as self-consistent non-gyrotropic equilibria and orientation asymmetries with respect to the magnetic field are presented.

We investigate the linear and nonlinear dynamics of the plasma waves that propagate in a non-gyrotropic plasma.

Finally we analyze, within the small Larmor radius limit, the effect of the plasma anisotropy on the linear and nonlinear development of the Kelvin-Helmholtz instability of a shear flow. This latter study is performed in the context of the interaction between the solar wind and the Earth's magnetosphere.

#P139 - Scientific studies for the restoration of “Madonna con Bambino e San Giovanni”, a venetian school panel painting of the end of sixteenth century of Museo Diocesano of Palermo.

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The scientific investigations aimed to the study, characterization and conservation of archaeological and artistic finds are in general based on a strong interdisciplinary approach and they allow, beside historical and artistic evaluations, to answer to questions about the dating, painting materials and technique, authors, artistic production area or movements or schools and also about authenticity of antique paintings.

The aim of this research was to assess the techniques used to create and decorate the wooden painting and to verify the state of preservation of the finishing materials of the artwork.

For that reason an integrated analytical approach based on the use of non-invasive and micro-invasive techniques was used, with the aim to obtain a characterization of the wooden panel, to elucidate the painting technique, including the stratigraphic sequence of the pigments and the organic binders employed, the state of preservation, the possible decay processes and the possible additions made during previous restorations.

The painting on wood panel (33 x 49 cm) “Madonna con Bambino e San Giovanni” represent the “Madonna della Consolazione”, referring to byzantine “Odeghetria”; it is attributed to unknown cretan-venetian artist and probably dated to the end of 16th century and it is conserved in the Museo Diocesano of Palermo.

At first the painting was analyzed by non-invasive techniques: macrophotography and photography under IR, UV and visible radiation (raking light) and Imaging techniques like IR reflectography (IRR) and false color infrared (IRFC), followed by spectroscopic ones, like reflectance spectrometry in the visible range (vis-RS) and X-ray fluorescence (ED-XRF), were chosen as informative first-step analyses. Then, after sampling, micro-fragments of the painting material were analyzed by several analytical techniques: optical microscopy, scanning electron microscopy with energy dispersive spectroscopy (SEM-EDS) and FTIR spectroscopy. Finally, for the restoration of the painting it was also used the analysis named colorimetry.

Data suggest a traditional painting technique, characterized by a single wooden panel, a thin white preparatory layer of gypsum and animal glue (< 1 mm), a dark priming (“imprimitura”), an engraved underdrawing and a paint layer composed by pigments dissolved in both egg and oil containing binding medium. The highlights (“lumeggiature”) on the dress and the nimbus are gilded with “a missione” technique (oil gilding or oil mordant or mordant gilding) while the globe in Baby Jesus hand is gilded with the technique named “a guazzo” (water gilding); in fact it is also present a reddish-brown preparatory layer (Armenian bole) composed of iron oxide with aluminosilicates.

#P140 - Microscopic approach to investigate constitutive materials and technique of San Vito wooden pulpit of Museo Diocesano of Palermo

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Magnificent artworks (panel paintings, architectural elements, statues, altars, sarcophagi, etc.) have been created in any culture using wood as the main constitutive material, especially for the supports. Many decorative techniques have been used on wood, with or without a preparation layer, by carving the ornamental elements, applying pigments and gold or silver leaves and inlaying ivory or mother-of-pearl, etc. Several organic binding and gluing *media* have been used: proteinaceous materials, drying oils, waxes, resins and vegetable gums.