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Status and Perspective of the FARCOS detector array

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\noindent{\underline{The 12th International Conference on Nucleus-Nucleus Collisions, June 21-26, 2015, Catania, Italy}}

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\begin{center}
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{\large \bf Status and Perspective of the FARCOS detector array}
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\begin{center}
% insert the authors here. The presenter is underlined
\underline{E.V. Pagano}1,2, L. Acosta4, R. Andolina1, L. Auditore5, C. Boiano6, G. Cardella3, A. Castoldi7,
D'Andrea3, E. De Filippo3, S. De Luca5, D. Dell'Aquila8, L. Francalanza8, E. Geraci1,3, B. Gnoffo3, C. Guazzoni6,7,
G. Lanzalone2,9, I. Lombardo8, N. Martorana1,2, T. Minniti, S. Norella5, A. Pagano3, M. Papa3, S. Pirrone3, G.
Politi1,3, F. Porto1,2, L. Quattrocchi5, F. Rizzo1,2, P. Russotto3, G. Sacca3, A. Trifiro5, M. Trimarchi5, G.
Verde3,10, M. Vigilante8.
\end{center}

\begin{center}
% these are the corresponding institutions
{\em 1Universita' di Catania, Catania, Italy} \\
{\em 2 INFN Laboratori Nazionali del Sud, Catania, Italy}\\
{\em 3 INFN sezione di Catania, Catania, Italy }\\
{\em 4 Istituto de Fisica, Universidad Nacional Autonoma de Mexico, Mèxico D.F. 01000, Mexico}\\
{\em 5 Dipartimento di Fisica e Scienze della Terra, Universita' di Messina e INFN Gruppo collegato di Messina,
Messina, Italy }\\

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{\em6 INFN sezione di Milano, Milano, Italy }\\
{\em7 Politecnico di Milano, Dipartimento di Elettronica, Informazione e Bioingegneria, Milano, Italy }\\
{\em8 INFN sezione di Napoli e Dipartimento di Fisica, Universita' di Napoli Federico II, Napoli, Italy }\\
{\em9 Universita' Kore Enna, Enna, Italy }\\
{\em10 Institute de Physique Nucleaire d'Orsay, Orsay, France }\\
\end{center}
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% write your abstract here

Nuclear matter under extreme conditions can be studied in the laboratory with heavy- ion (H.I.) collisions. In this case one can indeed vary both the incident energy and mass asymmetry. By exploring different impact parameters and rapidity regions it is possible to access nuclear densities that extends above and below saturation density. Such opportunities allow one to learn more about the nuclear equation of state and its implications in astrophysics phenomena such as supernovae explosions and neutron stars properties. Furthermore, during the dynamical evolution of the studied systems short living exotic states can be produced and their properties can be studied by detecting the final products of resonance decays. All these phenomena involve time scales that need to be accessed with multi- particle correlation measurements.

Experimental observables, such as linear momentum and energy, sensitive to both space-time and spectroscopic properties of the nuclear systems produced in the H.I. collisions, need to be measured with both high angle and energy resolution over a large solid angle coverage. In order to address this problem dedicated geometrically flexible correlator arrays are useful tools to be coupled with 4π detectors. One of these arrays is FARCOS, presently under construction at the INFN Sezione di Catania and Laboratori Nazionali del Sud (LNS). The FARCOS (Femtoscope ARray for COrelations and Spectroscopy) will consist of an array of twenty telescopes, each composed by two Double Sided Silicon Strip Detectors (DSSSD), of thickness 300 μ m and 1500 μ m, respectively, followed by four CsI(Tl) crystals read-out by silicon photodiodes. In this contribution a brief report of the present status of FARCOS array and future perspectives will be presented. Particular attention will be devoted to some preliminary results obtained in a recent experiment performed using a prototype of 4 clusters of FARCOS coupled with CHIMERA detector[1].

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[1] E.V. Pagano *\emph{et al.}*, EPJ Web of Conferences (2015) in press.

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Primary author: PAGANO, Emanuele Vincenzo (INFN-LNS, Catania, Italy)

Presenter: PAGANO, Emanuele Vincenzo (INFN-LNS, Catania, Italy)

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