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AM07: Characterization of the Novel Associative Memory Chip Prototype Designed in 28 nm CMOS Technology for High Energy Physics and Interdisciplinary Applications

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In the future years, luminosity, centre-of-mass energy of the proton-proton collisions at LHC will be strongly increased. Hence, next trigger system requires **more challenging AM chips**, with higher processing capability, lower power consumption, and higher memory density.

This work describes the characterization work on the first prototype (AM07) of these new generation 28 nm AMchips. **Characterization results confirm the chip functionality up to 200 MHz** as expected in simulation. With respect to the 65 nm AM06 chip, we achieved interesting results: we reduced the power consumption by a **factor of 1.7** and the silicon area by a **factor of 2.9**.

Summary

This poster will contains results about the characterization test on the AM07. A brief introduction on the chip design will be given. Functionality plots and current consumption tables will be presented with an interesting discussion on the promising results that we obtained with this new CMOS technology.

Authors: ANNOVI, Alberto (INFN Sezione di Pisa, Universita' e Scuola Normale Superiore, P); CALDERINI, Francesco (Unknown); Dr CAPRA, Stefano (INFN - National Institute for Nuclear Physics); CHECCUCCI, Bruno (Universita e INFN, Perugia (IT)); CRESCIOLI, Francesco (Centre National de la Recherche Scientifique (FR)); DE CANIO, Francesco (Universita and INFN (IT)); FEDI, Giacomo (Universita & INFN Pisa (IT)); FRONTINI, Luca (Università degli Studi e INFN Milano (IT)); GARCI, Maroua (Centre National de la Recherche Scientifique (FR)); GENTSOS, Christos (Aristotle University of Thessaloniki (GR)); KUBOTA, Takashi (University of Melbourne (AU)); LIBERALI, Valentino (Università degli Studi e INFN Milano (IT)); PALLA, Fabrizio (INFN Sezione di Pisa, Universita' e Scuola Normale Superiore, P); SHOJAII, Seyed Ruhollah (University of Melbourne (AU)); SOTIROPOULOU, Calliope-louisa (Universita di Pisa & INFN (IT)); TRAVERSI, Gianluca (Universita and INFN (IT)); STABILE, Alberto (Università degli Studi e INFN Milano (IT)); VIRET, Sebastien (Centre National de la Recherche Scientifique (FR))

Presenter: FEDI, Giacomo (Universita & INFN Pisa (IT))

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