

EUROPEAN COOPERATION
IN SCIENCE
AND TECHNOLOGY

CA15104 TD(17)03050
Lisbon, Portugal
February 1-3, 2017

EURO-COST

SOURCE: Signal Theory and Communications Department, University Carlos III of Madrid, Spain

Achievable Rates and Applications of a Textile Massive MIMO Hub

In the not too distant future, the onset of a wide range of new services is expected. Between their requirements greater data transmission capacity or strict real-time operation can be highlighted. In this paper, we investigate the uplink achievable rates of massive MIMO systems by means of using a wearable hub which brings the benefits of a very large number of antennas directly to the end user. Specifically we compare the achievable rates applying several precoding schemes such as matched filter, zero-forcing (ZF) or optimum precoding based on perfect channel state information (CSIT) when using a large textile antenna array in different simulation scenarios. As a baseline for analysis we also compare with the results achieved in the absence of channel knowledge. Some examples of new services enabled by the high achieved rates are discussed.

Estefanía Crespo Bardera, Ana García Armada and Matilde Sánchez Fernández
Universidad Carlos III de Madrid
C/ Avda de la Universidad 30
28911, Leganés
SPAIN
Phone: + 34-91 624 59 27
Email: {ecrespo, agarcia, mati}@tsc.uc3m.es