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A NOVEL BEAM FORMING ALGORITHM FOR MASSIVE MIMO SYSTEM USING KALMAN FORMULATION WITH DEEP LEARNING

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ABSTRACT

Deep learning (DL) techniques have lately been widely applied to telecommunication systems, and they have been shown to be an excellent tool for solving complicated non-convex optimization issues. In large-scale millimetre wave (mmWave) MIMO systems, hybrid pre coding (-beam forming) is the most promising solution for reducing high hardware costs and high power consumption. In the near-optimal analogue and digital precoders have been constructed multi-user environment, hybrid precoding combines large-dimensional analogue precoding (or beamforming) using kalman based formulation with deep learning technique for decomposition of the channel matrix. This work used a deep learning technique to create a hybrid precoding system with a low level of complexity and better spectral efficiency.

KEYWORDS: *Massive MIMO, Hybrid Beamforming, Beam Training, Deep Learning, Unsupervised Learning*