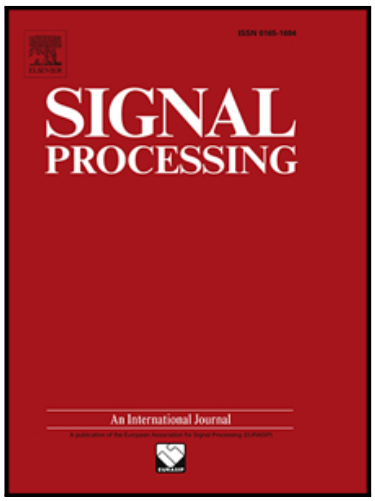

Generalized Khatri-Rao and Kronecker Space-Time Coding for MIMO Relay Systems with Closed-Form Semi-Blind Receivers

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PII: S0165-1684(18)30132-4
DOI: 10.1016/j.sigpro.2018.04.005
Reference: SIGPRO 6785

To appear in: *Signal Processing*

Received date: 1 December 2017
Revised date: 17 March 2018
Accepted date: 9 April 2018

Please cite this article as: Walter FreitasJr., Gérard Favier, André L.F. de Almeida, Generalized Khatri-Rao and Kronecker Space-Time Coding for MIMO Relay Systems with Closed-Form Semi-Blind Receivers, *Signal Processing* (2018), doi: 10.1016/j.sigpro.2018.04.005

Highlights

- Two new space-time (ST) coding schemes based on multiple Khatri-Rao and Kronecker products of symbol matrices are proposed.
- A singular value decomposition (SVD)-based rank-one approximation is presented to estimate in parallel each symbol matrix of the Khatri-Rao and Kronecker products,
- A one-way two-hop MIMO relaying system using the proposed ST codings both at the source and relay nodes is described, considering three different relaying protocols.
- Exploiting the algebraic structure of the PARAFAC models satisfied by the received signals, closed-form semi-blind receivers are derived for jointly estimating the two-hop channels and the transmitted symbols, for each relaying protocol.
- Monte Carlo simulation results are provided to illustrate the performance of the proposed receivers