# Strictly stationary solutions of multivariate ARMA equations with i.i.d. noise

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We obtain necessary and sufficient conditions for the existence of strictly stationary solutions of multivariate ARMA equations with independent and identically distributed noise. For general ARMA$(p,q)$ equations these conditions are expressed in terms of the characteristic polynomials of the defining equations and moments of the driving noise sequence, while for $p=1$ an additional characterization is obtained in terms of the Jordan canonical decomposition of the autoregressive matrix, the moving average coefficient matrices and the noise sequence. No a priori assumptions are made on either the driving noise sequence or the coefficient matrices.

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