

SYLVESTER EQUATIONS AND INTEGRABLE SYSTEMS: A  
BIDIFFERENTIAL CALCULUS PERSPECTIVE

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Matrix Sylvester equations frequently show up in connection with soliton solutions of integrable partial differential and difference equations. Special solutions are Cauchy-like matrices. In the bidifferential calculus approach, matrix Sylvester equations emerge from a quite general result about binary Darboux transformations (A. Dimakis and F. Mueller-Hoissen, SIGMA 9 (2013) 009). We recall this result and present several examples.