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EXISTENCE AND PRECISE ASYMPTOTIC BEHAVIOR OF STRONGLY MONOTONE SOLUTIONS OF SYSTEMS OF NONLINEAR DIFFERENTIAL EQUATIONS

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Abstract. We analyze positive solutions of the two-dimensional systems of nonlinear differential equations

$$x' + p(t)y^{\alpha} = 0, \qquad y' + q(t)x^{\beta} = 0, \tag{A}$$

$$x' = p(t)y^{\alpha}, \qquad y' = q(t)x^{\beta}, \tag{B}$$

in the framework of regular variation and indicate the situation in which system (A) (resp. (B)) possesses strongly decreasing solutions (resp. strongly increasing solutions) with accurate asymptotic behavior as $t \to \infty$.

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