

# THE SPECTRUM OF SOME QUADRATIC OPERATOR PENCILS ASSOCIATED WITH DAMPED DYNAMICAL SYSTEMS

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We investigate the spectrum of a damped quadratic operator pencil with  $2 \times 2$  block operator matrix coefficients. Our main result is that the spectrum splits asymptotically into four branches of eigenvalues and we determine their asymptotic behaviour. An application to the vibrations of two interacting connected strings and beams is given where one of them is damped.

(joint work V. Pivovarchik, Odessa)