On the destabilisation linear stochastic differential systems with non-normal drift

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In the ODEs theory, it has been wide deeply studied the effect of highly non-normality on linear systems of ordinary differential equations with a matrix of constant coefficient. In this talk, we present a particular instance of the general problem presented by Higham and Mao in [**?**] of destabilising a non-normal linear homogeneous system by a noisy term. We analytically construct a mean-square destabilising perturbation when the dimension of the system goes to infinity and the matrix of the cofficients assumes a particular bidiagonal bidiagonal form, which represents a prototype of a strongly non-normal case. Finally, we explore the numerical counterpart of the problem, analyzing the corresponding behaviour of the numerical stablity matrices of the stochastic θ-methods.

References

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