

Erratum for the paper “Feedback stabilization of isospectral control systems on complex flag manifolds: application to quantum ensembles”, published in *IEEE Transactions on Automatic Control* 52(11):2019-2028, 2007.

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In a series of papers,[2, 3], X. Wang and S. G. Schirmer found results slightly in contradiction with those of [1]. On the complex flag manifolds \mathcal{S} studied in [1, 2, 3] the “competing” equilibria of the desired target ρ_d (denoted antipodal points in [1]) are in general saddle points rather than repulsive equilibria as stated incorrectly in [1]. This implies that there exist stable submanifolds connecting two or more of these antipodal points which are not attracted to ρ_d . The results of [1] are still valid almost always, except for zero-measure submanifolds for which the conditions of Theorem 3 of [1] are not sufficient to guarantee convergence.

References

- [1] C. Altafini. Feedback stabilization of isospectral control systems on complex flag manifolds: application to quantum ensembles. *IEEE Transactions on Automatic Control*, 52(11):2019–2028, 2007.
- [2] X. Wang and S. Schirmer. Analysis of effectiveness of Lyapunov control for non-generic quantum states. *Automatic Control, IEEE Transactions on*, 55(6):1406–1411, 2010.
- [3] X. Wang and S. Schirmer. Analysis of Lyapunov method for control of quantum states. *Automatic Control, IEEE Transactions on*, 55(10):2259–2270, 2010.