

# A projector based convergence proof of the Ginelli algorithm for Covariant Lyapunov Vectors

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Covariant Lyapunov Vectors detect directions of asymptotic growth rates to small linear perturbations of solutions in a dynamical system. During the last few years, several algorithms to compute the CLVs emerged and were used in a broad range of applications. One of the most popular algorithms was developed by Ginelli and relies on the concept of a stationary Lyapunov basis. In my current research, I correct and extend existing convergence results for the stationary Lyapunov basis as in Ginelli's algorithm. Using orthogonal projections, I am able to handle the case of a degenerate Lyapunov spectrum. Ultimately, those new results will yield a complete convergence proof of the Ginelli algorithm.