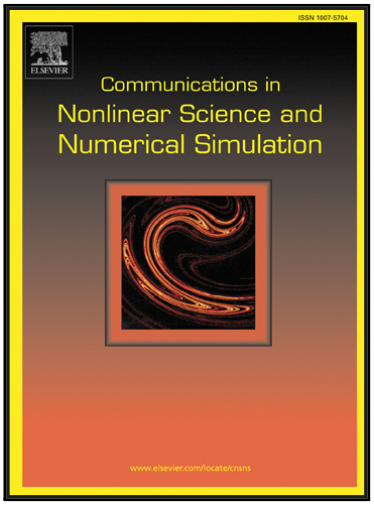


# Synchronization criteria for delayed Lur'e systems and randomly occurring sampled-data controller gain

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## Highlights

- A concept of stochastic parameter uncertainties is applied to a sampled-data control method to present a realistic system.
- A novel $t_k$-dependent double integral term of LKFs, $(t_{k+1}-t)\int_{t_k}^{t}\int_{s}^{t}\omega_3^T(u)R\omega_3(u)duds$, is proposed and a bound of its time derivative is estimated by utilizing Wirtinger-based double inequality and a maximum value of a function.
- Two novel LKFs, $2(t_{k+1}-t)\sum_{i=1}^{l}\int_0^{d_i^T x(t)}\left[k_{1,i}\big(\psi_i(s)-\gamma_i^- s\big)+k_{2,i}\big(\gamma_i^+ s-\psi_i(s)\big)\right]ds$, and $2(t-t_k)\sum_{i=1}^{l}\int_0^{d_i^T x(t)}\left[k_{3,i}\big(\psi_i(s)-\gamma_i^- s\big)+k_{4,i}\big(\gamma_i^+ s-\psi_i(s)\big)\right]ds$, are proposed for the first time through a condition of a nonlinear function to enhance the feasible region of synchronization criteria.
- The effectiveness and less conservatism of our results are illustrated via three numerical examples.