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**Semi-global containment control of multi-agent systems with intermittent input saturation.**

(English) [Zbl 1395.93023](#)

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Summary: This paper investigates containment control of multi-agent systems with intermittent communications and input saturation on fixed undirected networks. Under the assumption that each agent is asymptotically null controllable with bounded controls and there exists at least one leader that has directed path to each followers, both state feedback and output feedback control protocols are designed by utilizing the algebraic Riccati equation. For any *a priori* given bounded set, semi-global state feedback and output feedback containment control of multi-agent systems with intermittent communication can be attained. Numerical simulations are provided to ensure the effectiveness of results.

**MSC:**

[93A13](#) Hierarchical systems

[68T42](#) Agent technology and artificial intelligence

[93C15](#) Control/observation systems governed by ordinary differential equations

[93B52](#) Feedback control

[93C65](#) Discrete event control/observation systems

[93B51](#) Design techniques (robust design, computer-aided design, etc.)

[90B18](#) Communication networks in operations research

Cited in **28** Documents

**Keywords:**

[semi-global containment control](#); [multi-agent systems](#); [intermittent input saturation](#)

**Software:**

[Boids](#)

**Full Text:** [DOI](#)

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