

$$\dot{x} = f(x, u), \quad x(0) = x_0$$

$$y = g(x, u)$$

$$s\mathcal{X}(s) = (\mathcal{A} - \mathcal{N})\mathcal{X}(s) + \mathcal{L}U(s)$$

$$\mathcal{Y}(s) = \mathcal{C}\mathcal{X}(s) + \mathcal{D}U(s)$$

$$\dot{\Phi}(t, t_0) = A(t)\Phi(t, t_0)$$

Adaptive Guidance and Control of Small Unmanned Aerial Vehicles

Toufik Souanef



$$\dot{v} = \frac{1}{m}(R_A + R_F) + T_{fg} \cdot \begin{pmatrix} 0 \\ 0 \\ g \end{pmatrix} - (\tilde{\omega} + \tilde{\omega}_E) \cdot v$$

$$x^T P x < 0$$



$$\beta_{nc} = \frac{1}{N} \sum_{m=-1}^N \beta_m \cos n\psi_m$$

i=0; i<=N-1; i++)

```
if (D[1+i] >= sat_val) {count
if (xD[1+N+i] >= sat_val)
if (xD[1+2*N+i] >= sat_val)
if (xD[1+4*N+i] >= sat_val)
```



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$$\|y\|_{rms}^2 \leq \sup_{\omega \in \mathfrak{R}} |G(j\omega)|^2 \frac{1}{2\pi} \int_{-\infty}^{\infty} S_{uu}(\omega) d\omega$$

Adaptive Guidance and Control of Small Unmanned Aerial Vehicles

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by

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