

Disciplin / General field (专业方向) Unmanned Aerial Vehicle, Navigation, Guidance and Control, Artificial Intelligence, Industrial Science		Project number (不填) <i>(to be completed by ECPk)</i>
Project title Cooperative Guidance and Control for Intercepting Maneuvering Target by Using Multi-UAV System		
Project description (请填写项目简介和需要学生完成的工作) <p>With developments of unmanned aerial vehicles (UAV), some illegal UAVs were used to intrude into non-flight zones to perform tasks, threatening the security of human, properties, and information. In practical cases, the illegal UAVs are generally non-cooperative targets with constraints such as unknown maneuvering acceleration and limited observable state, which pose great challenge to traditional intercepting technology. In this project, based on the multi-UAV system, we are aiming to research into cooperative guidance and control approach for intercepting maneuvering target to avoid the damage from illegal UAVs. The goals of this project are given as followings:</p> <p>(1) Design cooperative guidance and control law for multi-UAV system to intercept maneuvering target.</p> <p>(2) Accomplish autonomous formation flight of a multi-UAV system by using artificial intelligence approach.</p> <p>(3) Design a vision-based target tracking method for estimating the position and orientation of maneuvering target.</p> <p>(4) Complete flight experiment of multi-UAV system in simulation/indoor environment.</p> <p>More background can be found at www.hanliang.pro</p>		
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