



## **Remotely Piloted Aircraft (RPA) as a platform for marine-based studies.**

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Light RPA (< 20kg) are a rapidly growing niche for atmospheric research. Enabled by the development of hobbyist platforms and avionics, Light RPA can fly complex pre-programmed flight plans. Further, the miniaturisation of traditional and novel sensors allows an ever broadening range of science missions to be accomplished with these aircraft.

During 2013, the Scottish Association for Marine Science's (SAMS') invested in the relevant infrastructure to operate Light-Remotely Piloted Aircraft (< 20 kg) in the marine environment, focusing initially on in-shore atmospheric physics, oceanography and marine ecology. RPA operations depend not only on suitable platforms and instruments, but certified operations crew, experienced science planning teams and a knowledge-base of RPA regulation. Once generic RPA capability is in place, a wide range of science missions are possible that would be problematic or impossible by other methods. This is especially the case for marine-RPA in Scotland, where the coastal environment offers many challenges and opportunities to data acquisition from pure research in cloud physics and stratified fluid dynamics to semi-commercial operations monitoring sea-health for aqua-culture.

Observation and measurements from the RPA facility are presented, indicating how generic RPA can be adapted to specific and inter-disciplinary field campaigns.

SAMS are now in a strong position to collaborate with UK and European groups on micro- to consortia-scale projects with focus on maritime or sea-ice environments at micro- to meso-scales.