

<p style="text-align: center;"><b>Research program:</b> <b><i>“Wetting dependent models of liquid slug-vapour plug regimes in pulsating heat pipes”</i></b></p>
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**Annex C**

**Department of Engineering and Applied Sciences**

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**Research project**

The research is linked with the ASI AO2009 project on the experimental and numerical analysis of a Pulsating Heat Pipe for space applications. A lumped parameter code has already been developed and tested. A robust comparison of the numerical results with the experiments on ground and in microgravity was carried out showing extremely good agreement in case of a capillary pulsating heat pipe. The grant is given to extend such simulation to a Hybrid Heat Pipe, which is working as a capillary system only in microgravity environment. Moreover the implementation of a sub-model considering the effect of wettability of the internal surfaces both for the fluid-dynamics and for the heat transfer effects is foreseen.