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Flying in 3D with an Insect based Visual Autopilot

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Flying in 3D with an Insect based Visual Autopilot

- Enables a bee to fly safely in various kinds of tunnels (Portelli et al, *J. Physiol. Paris*, submitted)
- Operates effectively without having to measure any speeds or distances (Portelli et al, *IEEE Biorob* 2008)
- Accounts for the behavior of real bees in corridors (Srinivasan et al 1991, 1996, Baird et al 2006, Serres et al 2008)

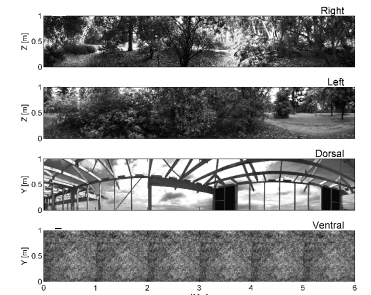
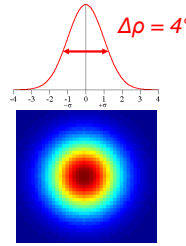
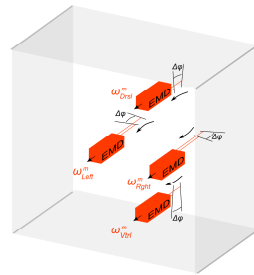
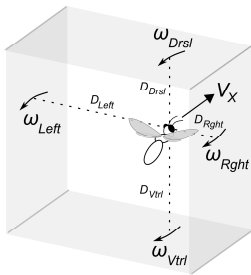
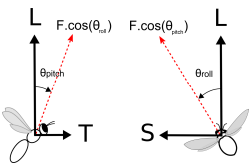
The simulated bee's eye and its environment:

> Uncoupled translations:

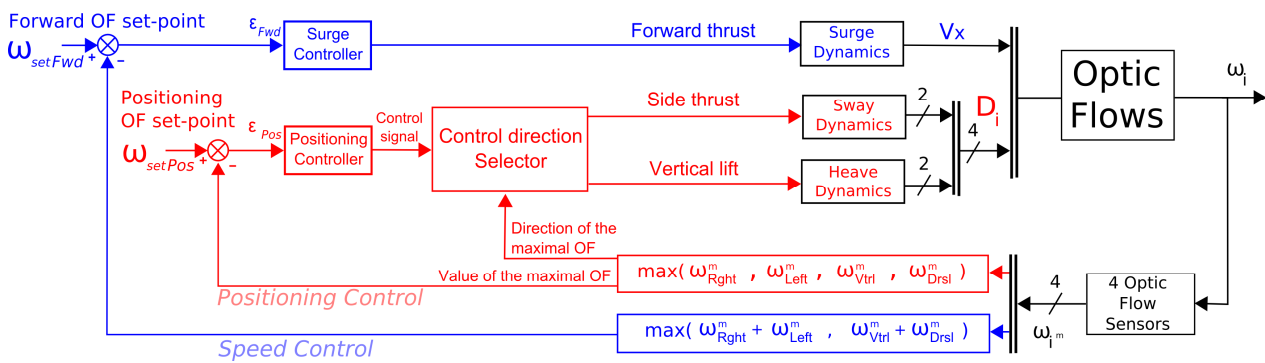
> Minimalist visual system:

> Gaussian sensitivity of photoreceptors:

> A tunnel lined with natural images:



The simulated autopilot: ALIS (AutopiLot using an Insect-based vision System)



Behavior of the simulated bee

