# A bee in a corridor: centering and wall-following

Julien Serres, Franck Ruffier, Guillaume P. Masson, Nicolas Franceschini



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*J. Serres, F. Ruffier, G.P. Masson and N. Franceschini*

Biorobotics Dpt., Institute of Movement Sciences, CNRS/Univ. of the Mediterranean

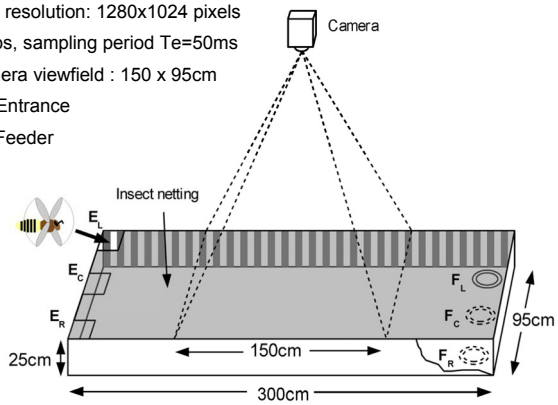
163 ave. Luminy 13288 Marseille Cedex 09 FRANCE julien.serres@univmed.fr

Future and Emerging Technologies

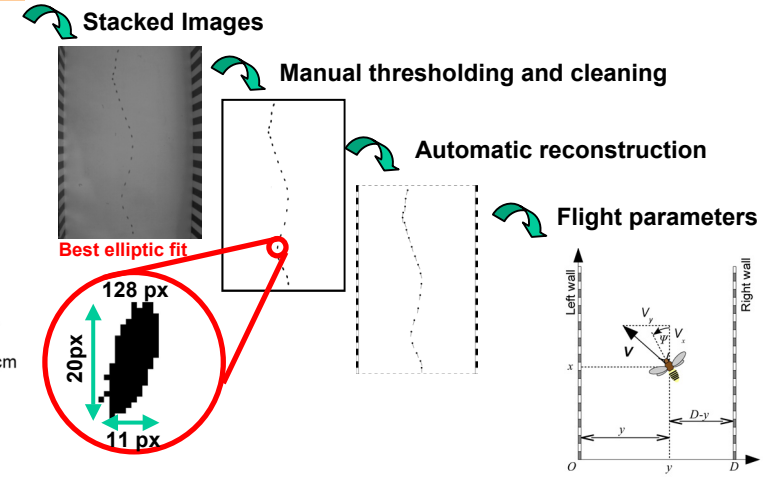
- Bees do not systematically center as previously reported in narrows corridors **(Kirchner and Srinivasan, 1989)**
- Balancing right and left optic flows does not account for the ***wall-following*** behaviour observed here **(Serres et al., Naturwissenchaften, final revision, 2008)**
- The bee's behaviour is well accounted for by ***two interdependent lateral optic flow regulators*** **(Serres et al., Auto. Robots, 2008)**

## • Experimental procedure

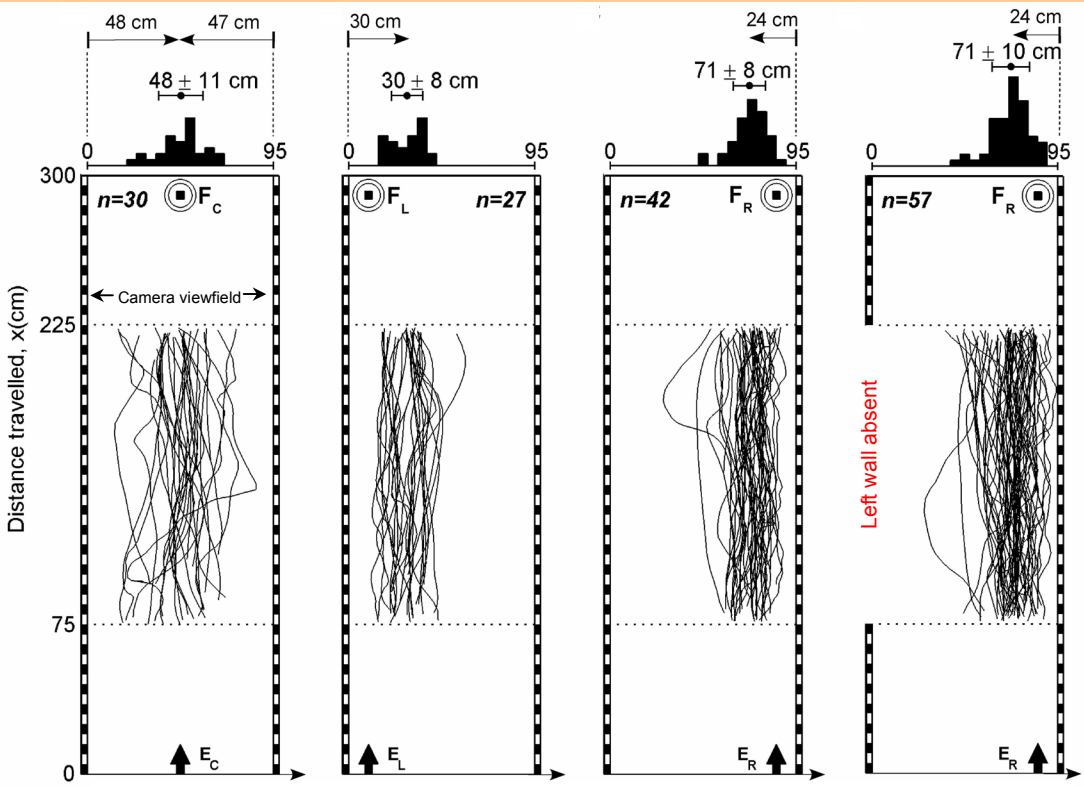
- Digital CMOS camera: *Prosilica*$^{TM}$ EC1280
- High resolution: 1280x1024 pixels
- 20 fps, sampling period Te=50ms
- Camera viewfield : 150 x 95cm
- E = Entrance
- F = Feeder




## • Image processing and time-lapse photography




## • Experimental results: to center or not to center ?

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|---|---|---|---|---|
| **Left Optic Flow (°/s)** | 148 ±54 | 235 ±80 | 73 ±25 | 4 ±1 |
| **Right Optic Flow (°/s)** | 151 ±68 | 106 ±39 | 226 ±68 | 265 ±116 |