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A bee in a corridor: centering and wall-following

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A bee in a corridor: centering and wall-following

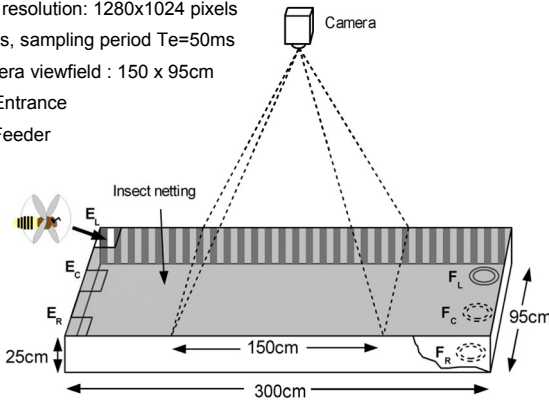
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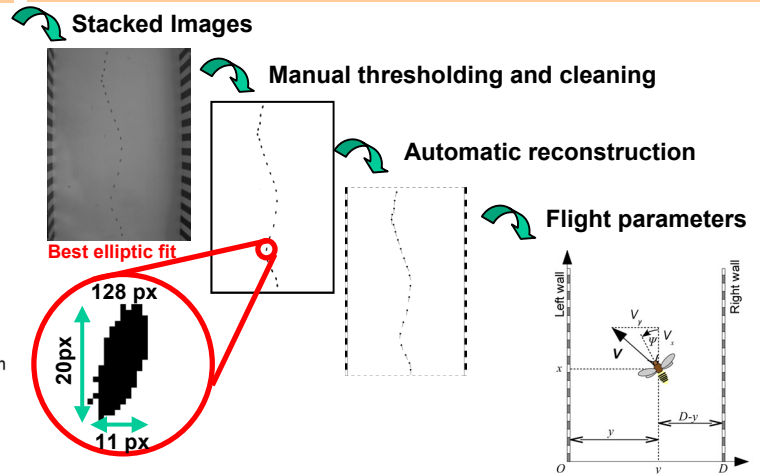
- ▶ Bees do not systematically center as previously reported in narrow corridors (Kirchner and Srinivasan, 1989)
- ▶ Balancing right and left optic flows does not account for the **wall-following** behaviour observed here (Serres et al., Naturwissenschaften, final revision, 2008)
- ▶ The bee's behaviour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

• Experimental procedure

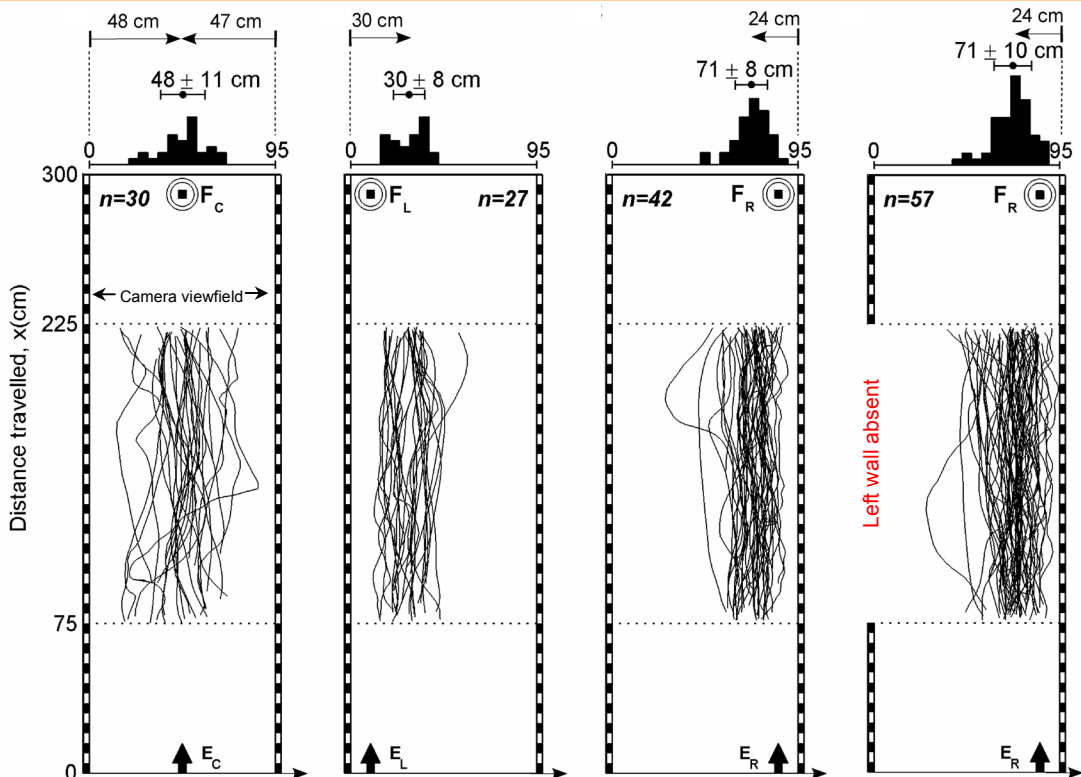
- ▶ Digital CMOS camera: *Prosilica™ EC1280*
- ▶ High resolution: 1280x1024 pixels
- ▶ 20 fps, sampling period $T_e=50\text{ms}$
- ▶ Camera viewfield : 150 x 95cm
- ▶ E = Entrance
- ▶ F = Feeder



• Image processing and time-lapse photography



• Experimental results: to center or not to center ?



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