Aalto University
School of Electrical
Engineering

Amplitude calibration principle at Metsähovi Radio Observatory

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- **Receiver status (3 mm)**
  - Some fringes were observed in last GMVA session (9/2015)
  - Problems with phase-lock-circuit → problems are now mostly solved
  - Feedhorn and some transition waveguides will be replaced

- **Available tools for amplitude calibration**
  - Calibration diode 5.5 K (LCP) / 7.1 K (RCP), measured in lab with liquid nitrogen
  - Quasi-optics (ON-OFF measurements)

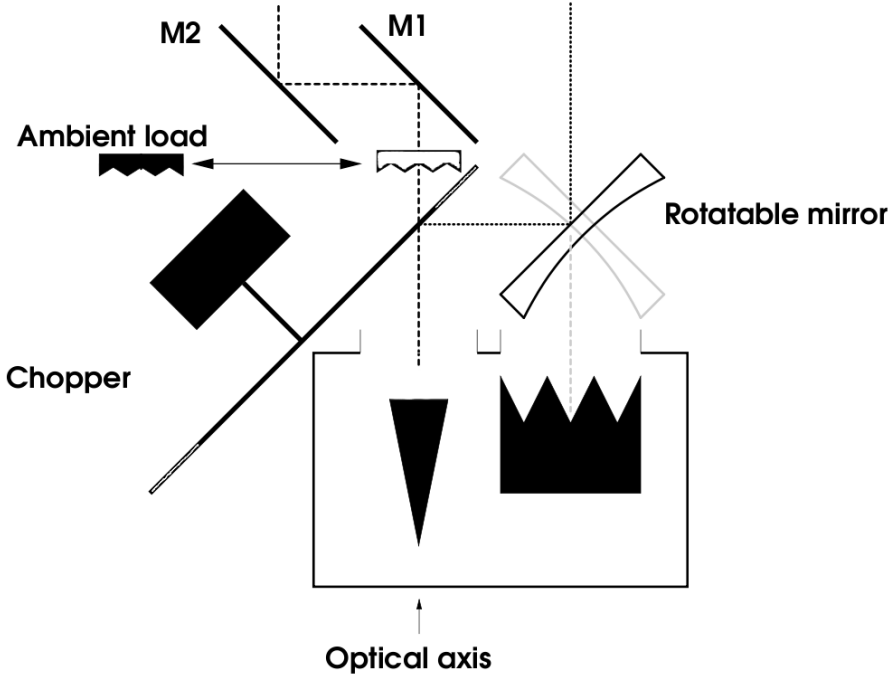
- **What is missing?**
  - Calibrator source flux density (*S*)

    → requires single dish observations

    → no capability yet

$$G = \frac{P_{\mathrm{on-source}} - P_{\mathrm{off-source}} T_{\mathrm{cal}}}{P_{\mathrm{cal-on}} - P_{\mathrm{cal-off}} S}$$

- **Antab / log files → Necessary information (T_{sys}, Cal_{on}/Cal_{off}, etc.)**


M2
M1
Ambient load
Rotatable mirror
Chopper
Optical axis