

NIKA evolution

◆ What we need to return at the telescope

- ◆ New array at 1mm with better sensitivity
- ◆ Magnetic field shielding
- ◆ Continuous measurement of frequency response for better photometry (1KHz frequency modulation)

◆ *Minimum option: same optics, same electronics, same cryostat*

◆ If possible, we try to

- 1 Change the helium bath for a pulse tube cryostat
- 2 Change the polariser for a dichroic separator
- 3 Change the electronics for the new one from LPSC with 200 pixels
- 4 Use a double polarisation kids array
- 5 Use a 3 polarisation measurement array

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◆ **Future evolution**

- ◆ New optics with 3 arc minute field of view
- ◆ More pixels with 3 preamplifiers (1 at 2mm and 2 at 1mm)
 - 300 pixels at 2mm
 - 600 pixels at 1mm
- ◆ Automatic frequency lock on the resonances
- ◆ Polarisation measurement
- ◆ Software improvement

Electronics

◆ **New electronics with 4 or 6 sub band of 125 Mhz each**

- ◆ each subband with no more than 100 pixel:
 - good for dynamics
 - small FPGA easy to program
 - adjustable level for each pixel
- ◆ combine the sub bands with low frequency mixers
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◆ **New electronics**

- **500 / 600 Mhz band**
- **up to 400 pixels (limited by the array pixels separation)**
- **same dynamics than presently (12 bit ADC for 100 pixels)**