

# VLBI opportunities and perspectives in Italy and on a global level

Marcello Giroletti Istituto di Radioastronomia, Bologna

## Italian VLBI

#### What we have

- 3 stations (Mc, Nt, Sr)
- software correlator (Bo)
- (optical fibre connection)
- some expertise
- angular resolution 5-50 mas
- sensitivity ~sub-milliJansky

## good for compact, non thermal sources

- RL AGN
- RG AGN
- galactic transients (XRB, ...)
- extragal. transients (GRB, ...)
- "exotic" transients (FRB, GW?)

synergy with other MA (maser)

## Improves/complements single dish

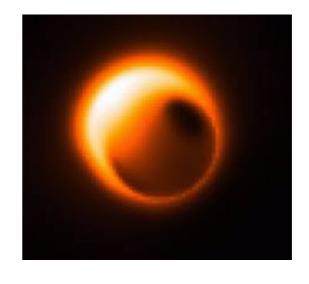
- filters out extended emission
- improves sensitivity (more collecting area, more time on source)
- filters out RFI

## Things to improve

- community awareness, manpower
- frequency coverage
- coordination (eg scheduling)

# Event Horizon Telescope

- combination of 9 telescopes operating at 230 GHz
- including phased ALMA





- angular resolution of about 20 uas
- able to resolve black hole shadow around  $SgrA^*$  (4x10 $^6M_{sun}$ ) and  $M87 (3-6x10^9M_{sun})$
- general relativity, jet launch

#### Collaborators

- APEX
- Arizona Radio Observatory (U. of Arizona)
- Caltech Submillimeter Observatory

- Georgia State University Goethe-Universität Frankfurt am Main
- Harvard Smithsonian Center for Astrophysics
- University of Massachusetts Amherst
- Instituto Nacional de Astrofísica, Óptica y Electrónica (INAOE)

- MIT Computer Science and Artificial Intelligence Lab (CSAIL)
- MIT Haystack Observatory
- Max-Planck-Institut für extraterrestrische Physik

- NSF The EHT project gratefully acknowledges support from the
- Onsala Space Observatory

- anghai Astronomical Observatory (SHAO)
- Universidad Nacional Autó noma de México (UNAM)
- University of California Berkeley (RAL)
- University of Chicago (South Pole Telescope)

