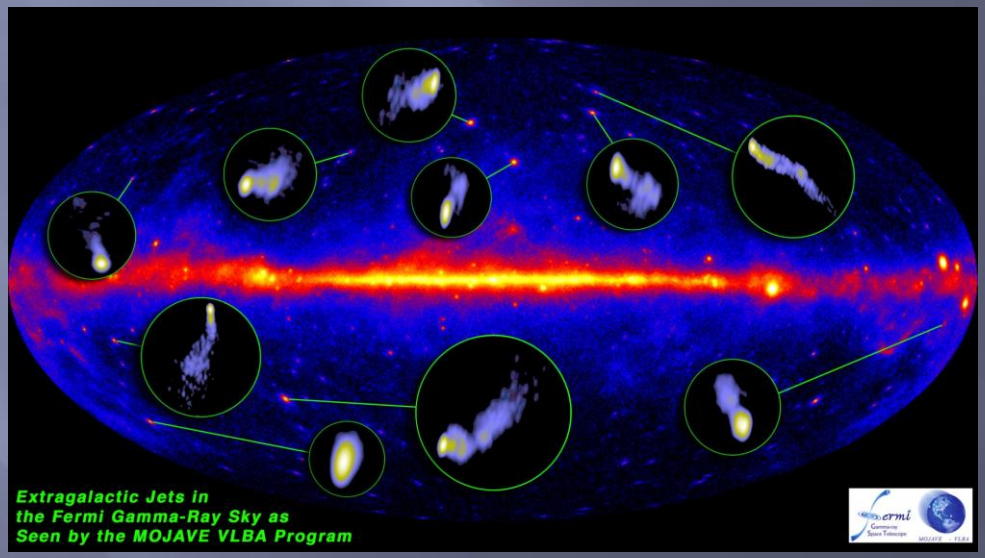
P5: BEAMING PROPERTIES OF GAMMA-RAY BRIGHT BLAZARS

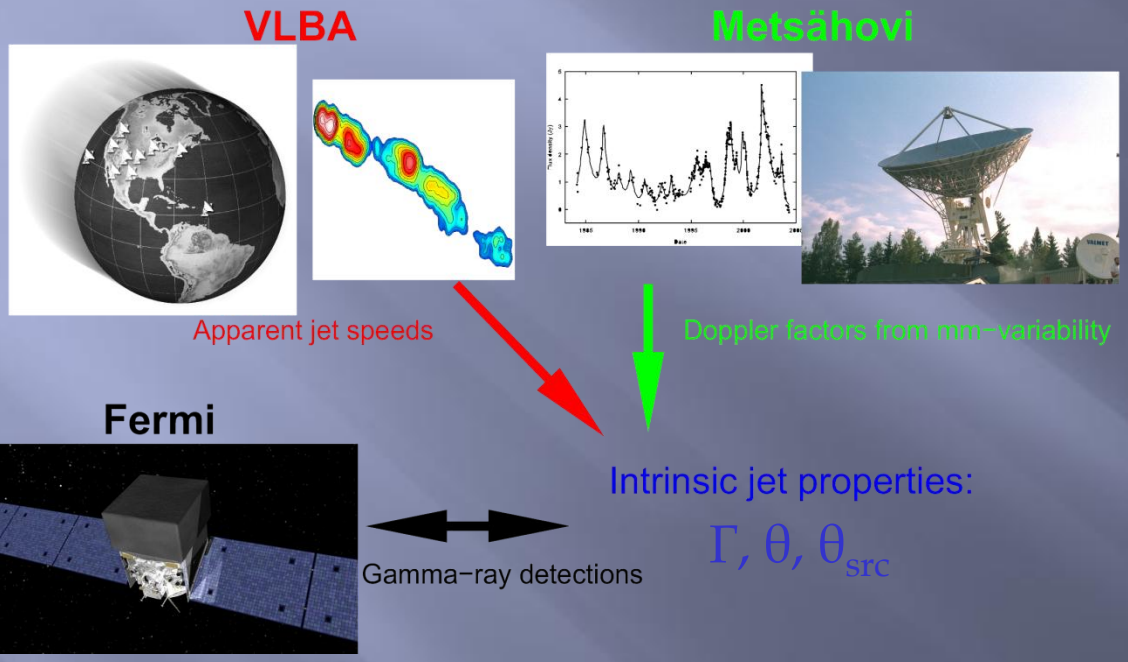


Tuomas Savolainen
Max-Planck-Institut f. Radioastronomie

Max-Planck-Institut
für Radioastronomie

MAX-PLANCK-GESELLSCHAFT

Data

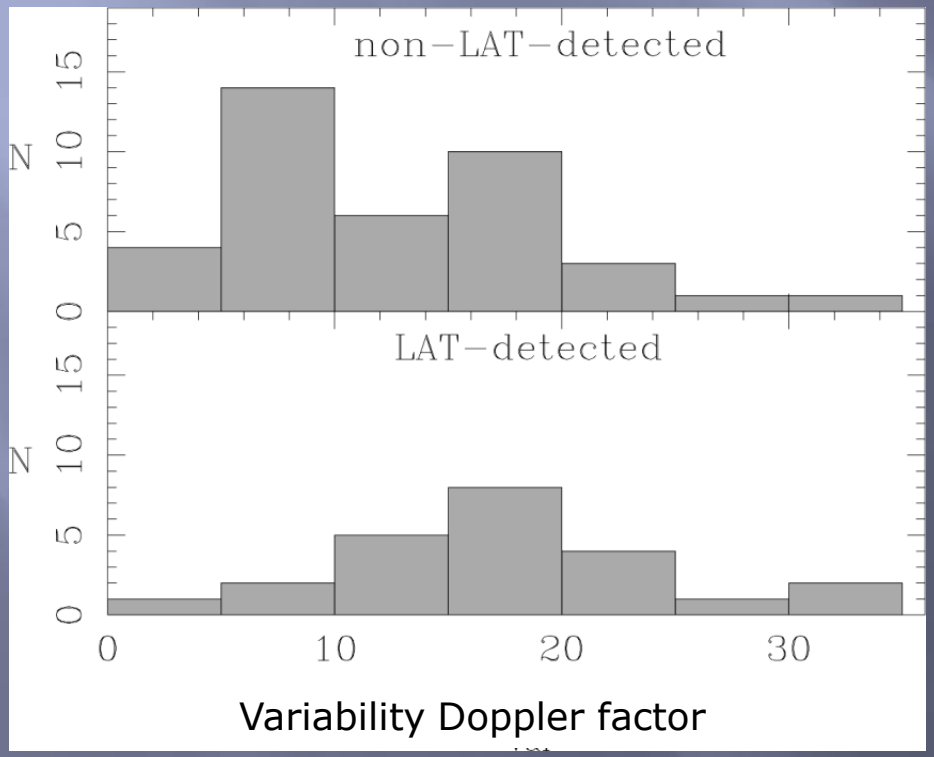


- Apparent jet speeds from MOJAVE survey (*Lister et al. 2009*)
- Doppler factors from the long term mm-monitoring at Metsähovi (*Hovatta et al. 2009*)
- Allows calculation of bulk Lorentz factors and viewing angles in the observer's frame and in the comoving frame of the source
- Sample: 62 blazars, a sub-set of the complete flux-density limited MOJAVE sample

(Radio) jet properties compared with Fermi LAT 3-month list of bright gamma-ray sources (*Savolainen et al. 2010, A&A, 512, 24*)

Results

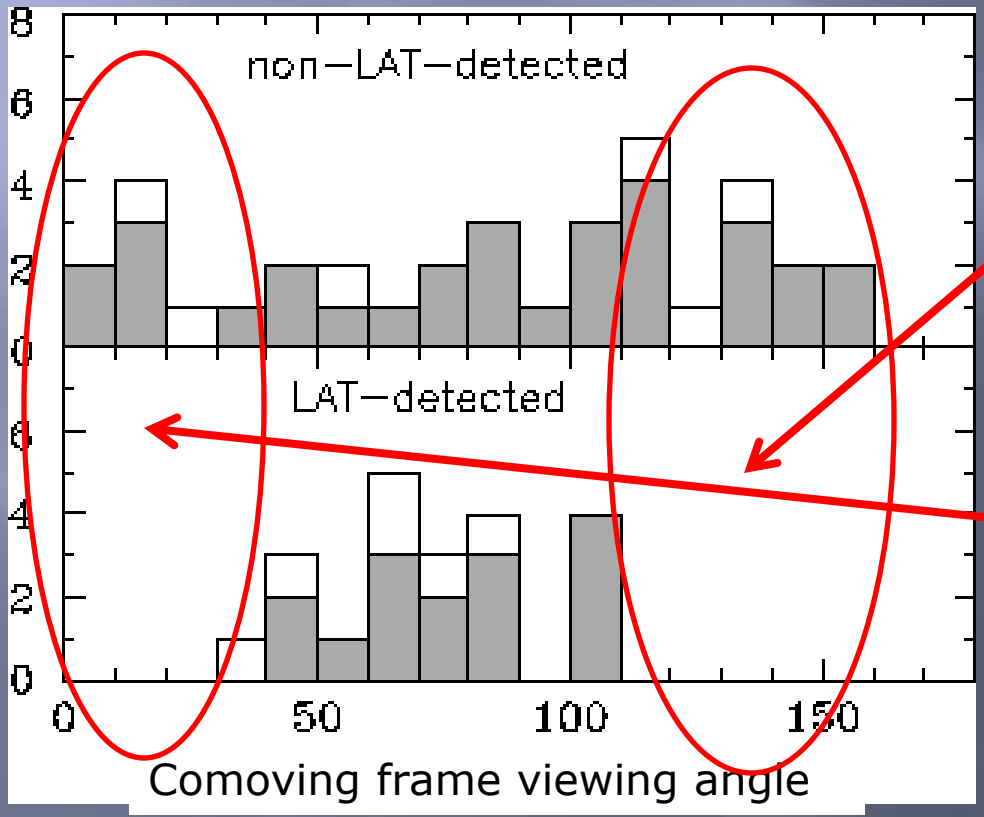
Bright γ-ray blazars detected by *Fermi* LAT during its first 3 months of observations have on average higher variability Doppler factors (P>99.3%)



- Agrees with bright gamma-ray blazars having faster apparent jet speeds, wider apparent jet opening angles, and higher core T_b → more highly beamed

Results

... and a narrower distribution of comoving frame viewing angles (P>98%)



- Difference at large comoving frame viewing angles can be explained by beaming
- Difference at small comoving frame viewing angles, if confirmed, requires another explanation. Intrinsic gamma-ray emission anisotropy?