### Are double-peaked narrow-line AGNs binaries? S. Frey<sup>1</sup>, Zs. Paragi<sup>2</sup>, K. É. Gabányi<sup>1</sup>, A. Tao<sup>3</sup>

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# Mergers

- Structure formation
  - Formation of elliptical galaxies
- Triggering starburst?
- Triggering AGN activity?

Binary Supermassive Black Holes

Credit: Philip Hopkins

# Binary SMBHs

- Only a few confirmed ones. Projected separation:
  - 10 100 kpc: 0.1%
  - kpc: handful confirmed (e.g. Komossa et al., 2003; Bianchi et al. 2008)
  - pc scale: 1
- How to find them?
  - double peaked emission lines?



Liu et al. ApJ **708**, 2010

• ....

#### SDSS J1536+0441

Mrk 78



Whittle & Wilson, AJ 2003



Wrobel & Laor, ApJ 2009



Bondi & Perez-Torres, ApJL 2010

## Observations

- Target: SDSS QSO reported to have double narrow emission lines (Peng et al. 2010)
- 2 hour-long exploratory e-EVN
- at 1.6 GHz
- 26.01.2011



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-50

3×10<sup>-4</sup> Jy/beam



Wednesday, April 13, 2011

### Future work

- Two cores? ⇒ Multi-frequency observation
- Observation of a larger sample
  - What is the best way to define the sample