The Evolution of GPS and CSS Meetings

1990, Dwingeloo, NL

Statistics/Surveys	6
Radio Spectra	3
Large Scale Radio Structure	3
VLBI radio Structure	13
Motions and Boosting	8
Optical	2
Interpretation	4

Almost all radio work

Defining basic radio properties (spectra, morphology, variability, extended structure, superluminal motions in quasars)

Differences between Radio Galaxies and Quasars puzzling

Finding new objects and establishing new samples

Schilizzi's Questions 1990

Are CSS and GPS sources actually different?

Why are they small? Are they Young or Recycled or frustrated objects?

Why are the morphologies of GPS/CSS galaxies different from their quasar counterparts?

Do galaxies really evolve in the sequence GPS -> CSS -> classical double?

What is the role of gas in the nucleus in shaping CSS and GPS sources? What is the source of the gas? Do the ISMs of GPS, CSS, and classical sources have different characteristics?

Is the low polarization of GPS sources due to very high rotation measures?

Why are the cores of GPS and CSS sources so weak? Have they turned off? What role do orientation and relativistic beaming play?

Can CSS/GPS sources be unified with other quasars and galaxies on the basis of orientation?

1996, Leiden, NL

New Samples and Surveys   7
VLBI   9
Hosts   7 (5 optical, 1 near-IR, 1 X-ray)
Environments   6 (2 optical. 1 X-ray)
Evolution and Unified Schemes   8

Finding more objects/samples still important
Some work on basic radio properties, including more polarimetry.
More on hosts and environments.
The field is becoming multi-wavelength.
New results: hosts are large ellipticals, CSS show alignment effect, optical emission line kinematics are complex, HI detected in absorption, high RM in some CSS
evolution more popular than frustration

2002, Kerastari, GR

New Samples	4
Radio Properties	5
Host Galaxies: Optical and X-rays	7
Environments	6
Evolution	6

Proper motions of CSOs is a major result,
low power samples, Spectral Aging, lots more optical and X-ray results,
The nature of the turnover: FFA vs. SSA,
 the first discussions of Feedback

2008, Riccione, IT

Radio Properties   11
Samples and Radio Source Populations   15
Young Radio Sources across the Electromagnetic Spectrum 10
Models and Evolution of small sources   7

This meeting was a continuation of the themes of 2002
Lots of new samples.
Low luminosity compact sources are LEGs.
Data continues to support evolution
First discussion of Infrared properties.
Prediction of Gamma ray emission from CSOs

2015, Rimini, IT

Lifecycles and Evolution   9
AGN Physics   11
AGN Populations   9
Host Galaxies and ISM   5
Feedback   7

First Gamma-ray constraints
Low frequency (and very high frequency) data is king
Frustration is back?
Larger emphasis on Feedback
Positive vs. Negative Feedback?

Questions 2015

Where are the CSO ϒ-ray sources?

How does jet-ISM interaction affect source properties/evolution?

Are there too many compact sources? What are the excess sources?

How do the FR0's fit in?

Do CSS have very high RM?

How do sources evolve on 10-1000 pc scales?

Do sources maintain a given accretion mode during their lifetimes?

How do we get the 100 MHz to 100 GHz surveys we need to define samples?

What role do GPS/CSS play in galactic-scale feedback?

What is the relation between GPS/CSS galaxies, quasars, and blazars?

FFA vs SSA?

What are the small dying sources?

Is frustration back?

Thanks to the LOC!!!

Daniele Dallacasa (chair)
Barbara Neri
Matteo Stagni
Karl Heinz-Mack