

## Conference Summary

Personal account, intelligent and serious work due to you  
selection, added errors and mistakes  
are mine

politically reasonably correct version of summary for my  
colleagues.

## “Day 1”

J. Krolik told us that he can calculate stresses and emission all the way to the horizon, claimed that no work is being done on the BLR...

M. Gaskell showed that infall leads to blue shift (thanks to Fermi), explained the lack of BL absorption lines,

H. Netzer relied on line spectroscopy to relate BLR and torus and to deconvolve AGN from star formation activity.

Sara Butiglione: no correlation between radio and disk (line) properties

Tigran Arshakian: emphasised the presence of stationary emission components in the jet. Markos Georganopoulos: Klein Nishina imposes the location of dissipation. A. Lobanov showed that even VSOP2 will not resolve the disk-jet interface.

Max Camenzind emphasised that for  $a > 0.85$  a lot of energy ( $10^{45}$  ergs/s) can be extracted from rotation energy, While A. King told us that high rotation rates are unlikely and even detrimental for a healthy growth.

On the Galactic center : Mohamad Zamaninasab: NIR is synchrotron with a stable geometry, Hagai Perets calculated the evolution of the stellar structures, that Ladislav Subr had made in the disk.

Isabelle Gavignaud described an impressive VIMOS data set to calculate the Eddington ratio of  $z \sim 1.5$  AGN. Masses???

A. Prieto brought .1'' (1-20pc) resolution in the IR (thermal) stressed difference in SED with aperture. Not quite radio, but..

## Day 2

M. Elitzur showed how he could do it all with just a disk, Frank Israel observed and described the material just outside of Moshe's disk, we only miss the connection between the two...

Marc Schartmann mentioned that evolution starts with starburst to be followed by AGN, a point also made by Elias Koulouridis. This link was also discussed by Catherine Buchanan who pointed out that the presence hidden BL is correlated with the star formation activity. Masotoshi Imanishi estimated that  $>50\%$  of ULIRGs have an AGN.

In the jet session (N. Vlahakis, Y. Kovalev, I. Agudo, M. Krause) observations show acceleration and beaming, theory and simul. Try to follow.....

Energetics of “feed back” was obtained from X-ray observations by F. Nicastro with wildly differing conclusions for 2 objects.

Paramita Barai showed that 10%-25% of the Universe is influenced by the outpour of AGN.

### **Day 3**

C. Tadhunter showed that the only energetically relevant outflow is that observed in the X-rays.

D. Axon used spectropolarimetry to untangle the movements in the BLR showed outflow, but would not fight with M. Gaskell.

On larger scales: David Rosario and Francesco Montenegro Montes (radio BAL QSOs look like GPS).

Marta Volonteri looked at different ways of growing BHs, remarked that the sum of the masses grows, and hence that accretion must be important (compared to mergers) and prefers small seeds to larger ones. Nicola Bennert did show that mergers do play a role, possibly as cause for accretion.

Dan Batcheldor gave a sanity check on mass and sigma measurements, at zero  $z$ , and Alessandro Marconi added further uncertainties going up some ladder. The end result will be interesting.

Series of talks looking at the evolution of merger/binary BH, with stars (David Merrit) and gas (S. Kazantzidis, L. Mayer, M. Dotti. The difficulty of the merging are surprising, importance of a proper thermodynamics treatment of the gas seems central

Andrea Merloni used very efficiently the available knowledge on AGN luminosity functions ( $z$ ) to extract their global physical evolution. He constrained  $\epsilon_{\text{rad}} \approx 0.065-0.069$ , back to low  $a$ .

Alejo Martinez-Sansigre found obscured AGN with jet pointing towards us and confirms intrinsic differences between obscures and un-obscured high  $z$  AGN.

Andreas Schulz shows that 0.1% of BH are active now.

Giuseppe Lodato efficiently grew massive seeds....

## Concluding remarks

Issue of influence of AGN on surroundings treated several times with large range of answers in energetics.

A. King urges us to look at momentum rather than energy.

VLTI appears, angular resolution for thermal phenomenology gets closer to that of non-thermal.

This was a very eclectic conference, no single idea that came repeatedly.

Ouzo, wine and Raki make a very pleasant succession in accompanying food along the Cretian coast with a measured feed back on the morale of the troops (from the noise level).

Many thanks to Emmanouil, Andrei et al.