

Conference on Steady Jets and Transient Jets

Contributed by Administrator
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The conference "Steady Jets and Transient Jets - Characteristics and Relationship" is held at the Max-Planck-Institut for radio astronomy in Bonn, Germany on April, 7 - 8 2010

Jets are a common phenomenon in accreting compact objects, both Galactic and extragalactic, and results of the last years show that there exist two types of jets with completely different characteristics. The first type of jet is a result of magneto-rotational processes within an optically thick (flat or inverted spectrum) radio core region, from which emerges a quasi-steady slowly moving jet, with Kelvin-Helmholtz instabilities dominating its morphology and dynamics that are best seen in AGNs. The second type of jet is a result of internal shocks, producing a transient jet which features a sequence of bright and typically optically thin regions that move at superluminal speeds, embedded in the structural patterns produced by instabilities in the underlying flow. These two types are called "steady" vs "transient" jet in the microquasar community and "underlying" vs "shocked" jet in the AGN community. X-ray observations of microquasars show that the steady jet is taking place in the 'low / hard' X-ray state and the transient jet in the 'steep power-law' X-ray state. That means that the two radio states correspond to two different X-ray states. The connection, if any, between the two types of jets continues to challenge observers and theoreticians. Latest results show a possible relationship: internal shocks form when an event like a disk instability or magnetic reconnection creates a faster jet that catches up with the previously generated slowly moving steady jet.

The aim of this workshop is to review the current status of the knowledge about steady and transient jets in various environments, like microquasars, AGN and gamma-ray bursts and to spotlight existing discrepancies/analogies in a fruitful interchange between the members of the different communities. An important goal is to identify the connection between steady jets and transient jets.

The conference will consist of the following sessions:

- JET OBSERVATIONS
- MHD STEADY JET PRODUCTION AND SHOCK-IN-JET THEORY
- JETS AND HIGH-ENERGY EMISSION

For further information please visit the conference website.