

Diffusive shock acceleration at wind shocks in AGN-driven outflows

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Active Galactic Nuclei (AGNi) can launch and sustain powerful outflows of very high velocity and large opening angle.

Provided that the activity lasts long enough such outflows develop a bubble structure characterized by an inner wind shock and an outer forward shock.

During the time the forward shock expands in the surrounding medium, the inner wind shock quickly decelerates while remaining strong, thereby creating ideal conditions for stationary particle acceleration.

We model the diffusive shock acceleration process at the wind shock of such AGN-driven winds and we explore the multimessenger implications in terms of high energy photons and neutrinos.

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