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Abstract for an Invited Paper
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The Physics of Cosmic Rays¹

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Cosmic rays, mostly relativistic protons, comprise one billionth of interstellar particles by number, but have as much energy as the rest of the interstellar gas combined. They are probably accelerated in supernova remnants, and are confined to the Galaxy by the interstellar magnetic field. Through interacting with the field, they exchange energy and momentum with the interstellar gas, driving magnetic turbulence and outflows, and generating significant heat. An even smaller minority of cosmic rays, those with the highest energies, probably originate outside the Galaxy, and challenge all existing theories of how they are accelerated.

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