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Discoveries from FAST

Tuesday, 13 June 2023 09:00 (30 minutes)

The Five-hundred-meter Aperture Spherical radio Telescope (FAST) has been in operation since early 2020. Largely motivated by the great Arecibo observatory, FAST now perches on the apex of sensitivity among centimeter-band radio instruments and will stay there until the advent of SKA. In a little three years, FAST data has facilitated more than 150 journal papers, including at least 7 on Nature, 2 on Science, 1 on Science Bulletin, and a few more on high-impact astronomy journals, such as Nature Astronomy. I will present a brief overview of FAST's discoveries so far, with particular emphasis on those that better reflects the unique advantages of this observatory. For example, the precise Zeeman measurement based on our novel HI Narrow Self-Absorption (HINSA) technique, the high quality HI images (~1% flux uncertainty), the world's first persistently active fast radio bursts (FRBs), etc. With these discoveries, I will also ponder upon the potential progresses to be made in terms of the better understanding the fundamental physical principles of the cosmos.

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