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Exploring the Universe with the Hydrogen 21 cm Line

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Deadline for manuscript submissions:
closed (30 November 2021)

Message from the Guest Editors

Electrons and protons in neutral hydrogen can have their magnetic moments aligned or anti-aligned to each other. When the transition from the higher energy state to the lower energy state occurs, a photon is emitted with a wavelength of 21 cm at a corresponding frequency of 1420 MHz. Since neutral hydrogen is one of the most common elements in the Universe and was present in abundance before the formation of the first stars, it is an extremely useful tool to probe the “dark age” of the Universe, whose epoch lies between the recombination and reionization. Even in more recent periods, where hydrogen is mostly found in its ionized form, small dense regions within galaxies host a large amount of neutral hydrogen, which can in turn trace the location of late-time galaxies and clusters.

We wish to invite both original and review papers to this Special Issue, in a wide perspective, exploring all facets that are inherent to the 21-cm line of hydrogen.

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Message from the Editor-in-Chief

The multidisciplinary *Universe* journal is aiming to follow and, hopefully, to lead to the largest extent as possible the ever-self renovating threads which weave mathematical theories with our understanding of the magnificent natural world. On behalf of all the distinguished members of the editorial board, I extend my welcome to this new journal and look forward to hearing from the interested contributors and learning about their valuable research.

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