

baryon physics of galaxy-scale hydrodynamic calculations onto a larger-volume DM-only run. We discuss the benefits that machine-based approaches like this entail, as well as suggestions to raise the scientific potential of such approaches.

특별세션
AI시대 천문인의 미래를 위한 소통

[초 CAW-01] Data Science and Deep Learning in Natural Sciences

Meeyoung Cha^{1,2}

¹Chief Investigator, Institute for Basic Science (IBS), Daejeon, Korea

²Associate Professor, School of Computing, Korea Advanced Institute of Science and Technology (KAIST), Daejeon, Korea

We are producing and consuming more data than ever before. Massive data allow us to better understand the world around us, yet they bring a new set of challenges due to their inherent noise and sheer enormity in size. Without smart algorithms and infrastructures, big data problems will remain intractable, and the same is true in natural science research. The mission of data science as a research field is to develop and apply computational methods in support of and in the replacement of costly practices in handling data. In this talk, I will introduce how data science and deep learning has been used for solving various problems in natural sciences. In particular, I will present a case study of analyzing high-resolution satellite images to infer socioeconomic scales of developing countries.

[초 CAW-02] Women’s Leadership in the International Astronomical Union

Hyesung Kang^{1,2}

¹Chair, National Organizing Committee, IAUGA2021

²Department of Earth Sciences, Pusan National University, Busan 46241, Korea

Recently, women astronomers have played increasingly important roles in the International Astronomical Union (IAU). Although only 18% are women across the entire membership of the IAU, currently one half of the IAU Executive Committee members are female. In fact, the previous, current, and next presidents of the IAU and many of the Division presidents are women. I will review a variety of efforts that the IAU has carried out to

pursue equality and diversity in Astronomy. Also I will share my personal experience and thoughts on meritocracy as a guiding principle that governs academic integrity and scholarly power system in scientific communities in Korea.

[구 CAW-03] Introduction to KAS code of ethics(천문학회 윤리강령제정)

Hyerim Noh(노혜림)

[KASI]

천문학회에서는 천문학의 발전을 위해 학회원들이 지켜야 할 책무를 준수하고 서로를 신뢰하고 존중하여 자유로운 연구환경을 마련하는데 노력하는 것을 목적으로 연구 윤리, 성희롱, 각종 차별 등 도덕윤리를 포함한 새로운 윤리강령을 제정할 계획으로 있으며 현재 윤리 TF 팀이 구성되어 일하고 있다. 전반적 윤리강령이 필요하게 된 배경, 취지, 그리고 필요성에 대해 간략하게 설명하고 참가자들의 의견을 청취하려 한다.

특별세션
차세대태양코로나그래프

[구 NGSC-01] Development of a diagnostic coronagraph on the ISS: BITSE overview and progress report

Yeon-Han Kim¹, Seonghwan Choi¹, Su-Chan Bong¹, Kyungsuk Cho^{1,2}, Young-Deuk Park¹, Jeffrey Newmark³, Nat. Gopalswamy³, Seiji Yashiro³, Nelson Reginald³

¹Korea Astronomy and Space Science Institute, Korea

²University of Science and Technology, Korea

³NASA Goddard Space Flight Center, USA

The Korea Astronomy and Space Science Institute (KASI) has been collaborating with the NASA’s Goddard Space Flight Center, to install a coronagraph on the International Space Station (ISS). The coronagraph will utilize spectral information to simultaneously measure electron density, temperature, and velocity. As a first step, we developed a new coronagraph and launched it on a stratospheric balloon in 2019 (BITSE) from Fort Sumner, New Mexico in USA. As the next step, the coronagraph will be further developed, installed and operate on the ISS (CODEX) in 2022 to address a number of important questions (e.g., source and acceleration of solar wind, and coronal heating) in the physics of the solar corona and the heliosphere. Recently, BITSE has been launched at Fort Sumner, New Mexico. In this presentation, we