Environmental Prediction Science Lab. - Our Missions and Directions-

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my mission: to maximize outcomes & potentials



I would like to be a leader rather than a boss. (pls. call me Kotsuki san w/o sensei)

Our Mission Statement



Our Mission Statement

What are our goals?

- world-leading scientific outcomes
- technical/personal growth to be more attractive
- contributions to realize more resilient society

• <u>How will we achieve</u>?

- we must be impressed first, to share with others
- to enjoy cutting-edge and keen sciences
- to win blue-ocean games, & explore new fields
- to evaluate ourselves severely (i.e., publication)
- <u>Consequently, we will be...</u>
 - proud of ourselves
 - attractive, resilient & dynamic equilibrium



Roles

- All Members (to be an ameba-like team)
 - being happy & keeping respects to others
 - taking your initiatives (e.g., suggestions, questions)
- <u>Myself</u>
 - to keep studying & being a leading scientist
 - to share information/thoughts & make you think
 - to commit our growth w/o my selfishness
- <u>Students / Professional Researchers</u>
 - to have curiosity, study, and do challenges
 - to educate younger people to be a resilient team
- <u>Supporting Staffs</u>
 - administrative works, to share useful info.
 - to provide better research environments
 - to increase SK's time for education & research



Our Lanchester Strategy

Research Topics

- to keep getting funded, we always need publications!
 - therefore, SK will propose research themes strongly.
- unique & niche sciences rather than obvious ones
 - blue ocean is always necessary
- following the ant colony optimization theory
 - 80 % resources \rightarrow to stabilize blue-ocean games
 - 20 % resources → to find unexplored blue oceans

• For Graduation Research

- B.S.: to solve problem(s) w/ supports
- M.S.: to solve problems by yourself
 - minimum: domestic/international conference presentations
 - standard: one-two English publications
- Ph. D.: to find and solve problems by yourself
 - minimum: one-two English publications

Research Topics

Atmosphere

- weather prediction
- HPC

remote sensing

Hydrology

- climate change
- disaster prediction
- real-time monitoring

Mathematics

- data assimilation
- EnKF → Particle Filter
- machine learning & Al

Social implementation - early warning system - agricultural insurance - w/ WNI?

Iightning prediction
cloud microphysics modeling

Atmosphere

weather predictionHPC

remote sensing

• <u>Leading DA research</u> - hybrid DA - particle filter - EFSO-based QC

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• New fields

- DA for nueron-modeling
- behavioral economics

radioactive monitoring system >>

Machine Learning & Al
DA as featured data
emulating physical models
extrapolating nowcasts