【RIMS 合宿型セミナー】

① 代表者	所属：	The Pennsylvania State University	副代表者	RIKEN Advanced Institute for Comutational Science
	職名：	Assistant Professor		Team Leader
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② 題　目：Mathematical science in numerical modeling and data assimilation of planetary atmospheres from Earth and Mars to Venus

(英文名：　　)

③実施期間：　平成　31 年　　3 月　　20 日～平成　31 年　　3 月　　23 日（　　4 日間）

④参加者数：　　20 名　　（内、外国人　　3 名）

⑤講 演 数：　　9 コマ (内、英語で行なわれたもの　　9 コマ)

⑥合宿型セミナーの概要 (開催目的、成果など)：

The pupose of the seminar is to advance the achievements of modeling and data assimilation for the planetary atmospheres, especially those for Venus where the Japanese exploration mission, AKATSUKI, is currently collecting imagery data. Through the assembly and interaction of scientists in the fields of numerical atmospheric modeling and data analyses, and mathematical aspects of data assimilation and uncertainty quantification, we elucidated the challenges and develop solutions to data assimilation for planetary atmospheres. Finally, we established efficient strategy for data assimilation of Venus atmosphere successfully.

研究成果の公表方法

⑦　講究録を　　□ 発行する　　☑ 発行しない

※発行する場合: 原稿完成予定時期　　平成　　年　　月　　日頃

⑧　講究録以外の方法で報告集を発行する場合：

タイトル:

出 版 社:　　出版予定時期：平成　　年　　月　　日頃

⑨　専門誌等による場合：

主要な論文リスト (掲載予定、プレプリントを含む。準備中も可)

Sugimoto, N., Kouyama T,, Takagi, M., (2019) Impact of data assimilation on thermal tides in the case of Venus Express wind observation. Geophysical Research Letters, submitted.

Sugimoto, N., Takagi, M., Matsuda, Y. (2019) Fully developed superrotation driven by the mean meridional circulation in a Venus GCM. Geophysical Research Letters, 46, 1776-1784. https://doi.org/10.1029/2018GL080917

Kashimura, H., Sugimoto, N., Takagi, M., Matsuda, Y., Ohfuchi, W., Enomoto, T., Nakajima, K., Sato, T. M., Hashimoto, G. L., Satoh, T., Takahashi, Y. O., Hayashi, Y.-Y., (2019) Planetary-scale streak structure reproduced in high-resolution simulations of the Venus atmosphere with a low-stability layer. Nat. Commun., 10(23), 1–11.

Program

3/20(Wed)

- (19:30-19:45) Steven Greybush (Penn State Univ., USA)
  Summary of Mars data assimilation
- (19:45-20:30) Takemasa Miyoshi (RIKEN)
  Big Data Assimilation: A New Science for Weather Prediction and Beyond
- (20:30-21:15) Steve Penny (Univ. Maryland, USA)
  Challenges in Ocean and Coupled Data Assimilation

3/21(Thu)

- (9:00-11:00) Hiroki Kashimura (Kobe Univ.)
  Simulations of the Venus atmospheric circulation by Venus-AFES
- (11:00-12:00, 14:00-15:00) Norihiko Sugimoto (Keio Univ.)
  Venus AFES LETKF Data Assimilation System
- (15:00-17:00) Steve Penny (Univ. Maryland, USA)
  Theoretical Considerations in Data Assimilation relevant for Planetary Applications
- (Evg.) Summary and discussion for Venus data assimilation

3/22(Fri)

- (9:00-11:00) Takeshi Imamura (Univ. Tokyo)
  Observations by a Venusian meteorological satellite
- (11:00-12:00,14:00-15:00) Shin'ya Nakano (Inst. Statistical Math.)
  Data assimilation in highly uncertain systems
- (15:00-17:00) Kazuyuki Nakamura (Meiji Univ.)
  Sequential Bayesian Filtering, Particle filtering and Its Applications
- (Evg.) Reception

3/23(Sat)

- (AM) Summary and discussion for future plan