



**CSDMS**  
community surface  
dynamics modeling system

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# ON THE SURFACE

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*CSDMS Newsletter*  
*April 2024*

Join CSDMS

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## Latest Progress Toward Parallel BMI!

A group of scientists and software engineers from the CSDMS community, led by Bert Jagers (Deltares), and representing interested groups at NOAA, NCAR, USGS, and TU Delft, is planning how to adapt the [Basic Model Interface](#) (BMI) to run in parallel environments. The group has been meeting regularly since October 2023. Follow their progress—and add your comments—on [The BMI Forum](#) on GitHub.

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## Register Now!

The final webinar in the CSDMS 2024 Spring Webinar Series is next Monday!

### ***Frugal computing: On the need for low carbon and sustainable computing***

April 29th, 2024 @ 8:00AM MDT

**Wim Vanderbauwhede, University of Glasgow**

In this talk, I will discuss the need for low carbon and sustainable computing. The current emissions from computing are almost 4% of the world total. This is already more than emissions from the airline industry and ICT emissions are projected to rise steeply over the next two decades. By 2040 emissions from computing alone will account for more than half of the emissions budget to keep global warming below 1.5°C. Consequently, this growth in computing emissions is unsustainable. The emissions from production of computing devices exceed the emissions from operating them, so even if devices are more energy efficient producing more of them will make the emissions problem worse. Therefore we must extend the useful life of our computing devices. As a society we need to start treating computational resources as finite and precious, to be utilized only when necessary, and as effectively as possible. We need frugal computing: achieving our aims with less energy and material.

### **[REGISTER](#)**

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Previous CSDMS-sponsored webinars are [archived here](#) and available for viewing anytime.

If you have suggestions for future webinars, please contact [csdms@colorado.edu](mailto:csdms@colorado.edu).

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## **CSDMS Community News**

[The recipient of the 2024 CSDMS Student Modeler Award is \*\*Sebrian Beselly\*\*, IHE/ TU, Delft.](#) Sebrian was awarded for his submission, "*Modeling Mangrove-Mudflat Dynamics with a Coupled Individual-Based Hydromorphodynamic Model*" that couples Delft 3D with a new eco-dynamics



model to simulate mangrove population in active coastal accumulation areas. Congratulations Sebrian!

CSDMS is also happy to announce that [Miles Reed](#), University



of Wisconsin, was the first runner-up for the CSDMS 2024 Student Modeler Award for his submission, "*Designing and Applying a Landscape Evolution Model Infused with Cosmogenic Nuclides for Geomorphic Insights*".

Both Sebrian and Miles will be providing Keynote Presentations at the CSDMS 2024 Annual Meeting this May!

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## **CSDMS Data Components: data-model integration tools for Earth surface processes modeling**

Check out the latest publication on a proposed design framework for Data Components:

Gan, T., Tucker, G. E., Hutton, E. W. H., Piper, M. D., Overeem, I., Kettner, A. J., Campforts, B., Moriarty, J. M., Undzis, B., Pierce, E., and McCready, L.: CSDMS Data Components: data–model integration tools for Earth surface processes modeling, *Geosci. Model Dev.*, 17, 2165–2185, <https://doi.org/10.5194/gmd-17-2165-2024>, 2024.

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## **Best Practices in Scientific Programming**

CSDMS Research Software Engineer, Mark Piper has created an animated summary of "[Best Practices in Scientific Programming](#)". Click through the deck using navigation arrows in bottom right corner and click on blue text for in-depth information.

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## **CSDMS Community Teaching and Research Resources**

**CSDMS Workbench** - <https://csdms.colorado.edu/wiki/Workbench>

**CSDMS Model Repo** - [https://csdms.colorado.edu/wiki/Model\\_download\\_portal](https://csdms.colorado.edu/wiki/Model_download_portal)

**Open Earthscape Jupyter Hub** - <https://csdms.colorado.edu/wiki/JupyterHub>

**CSDMS EKT Labs** - [https://csdms.colorado.edu/wiki/Labs\\_portal](https://csdms.colorado.edu/wiki/Labs_portal)

**Office Hours** (via Zoom) with a CSDMS Research Software Engineer - 9AM on Wednesdays. To register - <https://csdms.colorado.edu/wiki/OfficeHours>

**CSDMS Help Desk** - <https://csdms.github.io/help-desk/>

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## Join us on Bluesky, Mastadon and X!

Be the first to know about all the new resources!! For new products, job postings, events, breaking science, training opportunities and more, please follow us [@CSDMS.bsky.social](https://bsky.app/profile/csdms.bsky.social) on Bluesky, [@CSDMS@fediscience.org](https://mastodon.social/@CSDMS) on Mastodon and [@CSDMS](https://twitter.com/CSDMS) on X.



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