

5 years of oemof development

@uvchik @gplssm @c-moeller

10th oemof dev meeting

December 4, 2019



oemof ['ø:mɔf]
open **e**nergy **m**odeling **f**ramework

What do you know about oemof's history?

- ▶ Build groups of 2-4 members
- ▶ Take A,B,C,D - sheets for each group
- ▶ Close your notebook and put your smartphone in your bag - no cheating!

What happened on December 4th 2014?



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- ▶ A: The initial commit of the oemof repository was created
- ▶ B: The oemof foundation meeting was held
- ▶ C: A presentation was held about collaborative working in the field of energy modelling.
- ▶ D: The decision was taken to found oemof

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Pahesmf

Vision einer offenen Modellierungsbibliothek

Uwe Krien, Guido Pleßmann
ZNES-RLI-Workshop
Flensburg, 4. Dezember 2014



Which model did NOT inspire oemof

- ▶ A: renpass
- ▶ B: NooDEI
- ▶ C: MR Esom
- ▶ D: reegis_hp

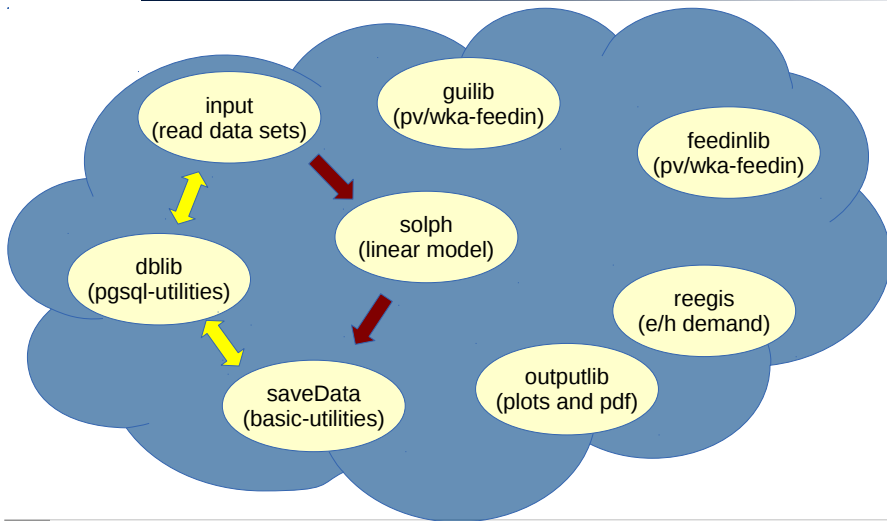
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- **Die Baukastenidee**
- **Dictionaries für Schnittstellen**
- **Dokumentation**
- **Zusammenarbeit**

- Vorarbeit:** Entwicklung und Ausgestaltung von pahe-smf als Community-Projekt für Energiemodelle
- Vorschlag:** Umgestaltung zu einem gemeinsamen Projekt von RLI und ZNES als Testphase für institutsübergreifendes, kollaboratives Arbeiten
- Idee:** Weiterentwicklung und später Ausweitung auf weitere Institute und Gruppen





- Dictionaries in Python sind Datenbäume um komplexe Datenstrukturen abzulegen und an Funktionen zu übergeben
- Dictionaries werden real nicht übergeben, sondern nur Zeiger gesetzt.
- Äste können hinzuwachsen und abgesägt werden
- Grundlegende Ast-Struktur sollte abgesprochen sein, Orientierung an vorhandenen Modulen, die bereits entsprechende Äste haben (z.B. Parameter, Zeitreihen, Ergebnisse....)
- Benötigtes Dictionary muss gut dokumentiert sein, um Nutzbarkeit des Moduls zu erhöhen bzw. möglich zu machen



- Dezentrale Dokumentationsstruktur im restructuredText (rst)
- Doc-Strings werden mit rst erstellt und kompiliert in html, pdf...
- rst-Dateien sind git-fähig, kompilierte Version wird ausgeschlossen
- Schwarmarbeit: Alle sind für „ihre“ Docstrings verantwortlich, Fehler in zentralen Dokumenten können von allen verbessert werden
- Kompilierte Dokumente (pdf) oder html-Seiten werden zyklisch erstellt



- Transparente Entwicklungsplanung (Roadmap, Gantt)
- Wünsche, Verbesserungen, Fehlerreports über Ticketsystem
- Nutzung des Wikis für die Entwicklerdokumentation
- *Python-packages* in *git-submodules* mit pahesmf als haupt-repository
- Verantwortliche für *packages* koordinieren Planung und Rechte



- Möglichkeit der gemeinsamen Entwicklung (z.B. gemeinsam an feedinlib) oder parallelen Entwicklung (z.B. nicht lineares Optimierungsmodell)
- Wichtig: Möglichst kleinteilig, gut dokumentiert und auf Basis gemeinsamer Schnittstellen.
- OpenSource-Variante sollte immer möglich sein, z.B. durch Austausch von Gurobi mit CBC

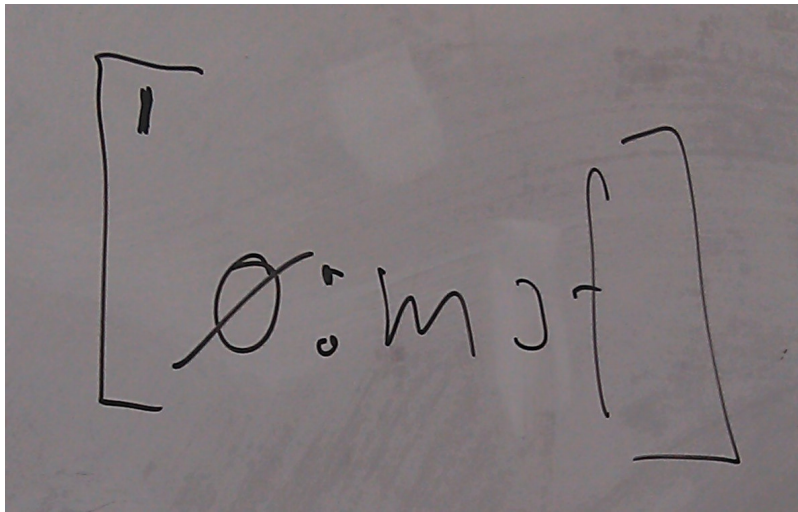


- Entscheidung über gemeinsames Projekt gemeinsam treffen
- Schnittstellen und Programmiergrundlagen definieren
- Struktur der Zusammenarbeit und Verantwortlichkeiten festlegen.

**Vielen Dank fürs Zuhören.
Ich freu mich auf Fragen und
Diskussion.**



We drove to Flensburg with *pahesmf* and returned with



On the way towards v0.0.1

What was the first package published?

- ▶ A: feedinlib
- ▶ B: outputlib
- ▶ C: solph
- ▶ D: oemof

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Extra: What was the first version number and why?

Work on the first oemof (solph) release



What was the name of the first release package?

- ▶ A: oemof_core
- ▶ B: oemof_network
- ▶ C: oemof_solph
- ▶ D: oemof_base

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Release party (guys)



Release party (girls)



The great refactoring: v0.1.0

What was NOT released in autumn 2016

- ▶ A: oemof v0.1.0
- ▶ B: feedinlib v0.0.11
- ▶ C: windpowerlib v0.0.1
- ▶ D: demandlib v0.1.0

What was NOT released in autumn 2016

- ▶ A: oemof v0.1.0
- ▶ B: feedinlib v0.0.11
- ▶ C: **windpowerlib v0.0.1** -> August 2016 :-)
- ▶ D: demandlib v0.1.0

What was totally new in v0.1.0?

- ▶ A: Investment mode
- ▶ B: Additional constraints
- ▶ C: Flow class
- ▶ D: EnergySystem class

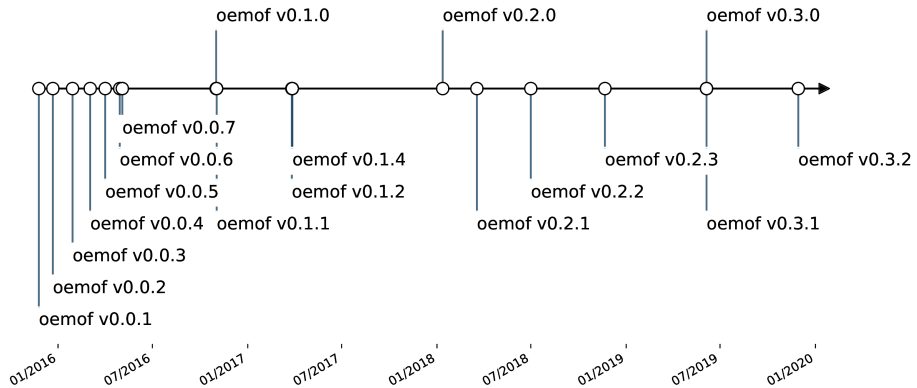
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- ▶ A: Investment mode
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Development post v0.1.0 focused on
code quality and new features

Which oemof release took the longest?

- ▶ A: v0.0.1
- ▶ B: v0.2.0
- ▶ C: v0.5.2
- ▶ D: v0.1.0



Extra point: Which package came up next?

TESPy

When was the initial commit of TESPy?

- ▶ A: 06/2016
- ▶ B: 12/2016
- ▶ C: 06/2017
- ▶ D: 12/2017

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- ▶ A: 06/2016
- ▶ B: 12/2016
- ▶ C: 06/2017
- ▶ D: **12/2017**

The first user meeting in May 2017



How many books exist about oemof?

- ▶ A: No real book
- ▶ B: A chaotic collection of concept papers published as a book
- ▶ C: A Springer book but nobody knows how this could ever pass the review
- ▶ D: An english book but in Latin it would have been at least funny

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The meetings from 12/2017 to 05/2019



Some statistics from the git repository

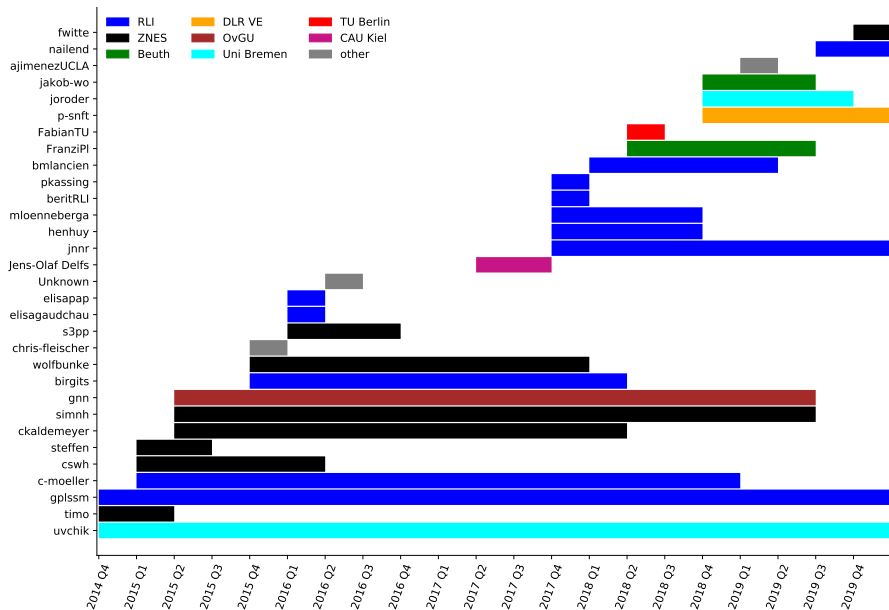
How many contributors committed to oemof's code base until now?

- ▶ A: 13
- ▶ B: 42
- ▶ C: 28
- ▶ D: 31

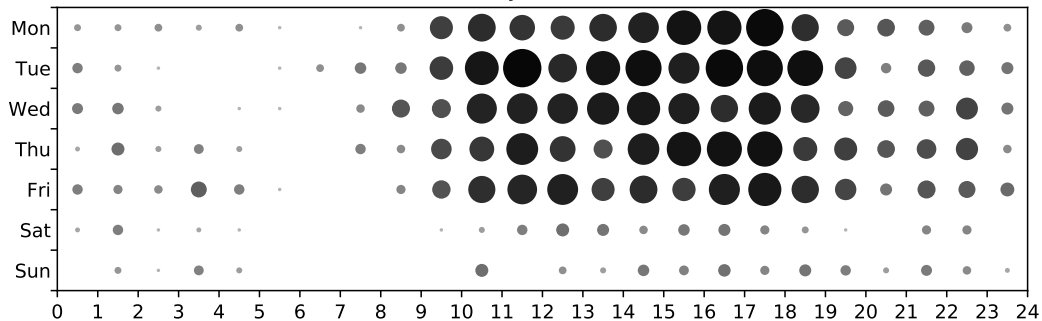
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More and more contributors joined over time

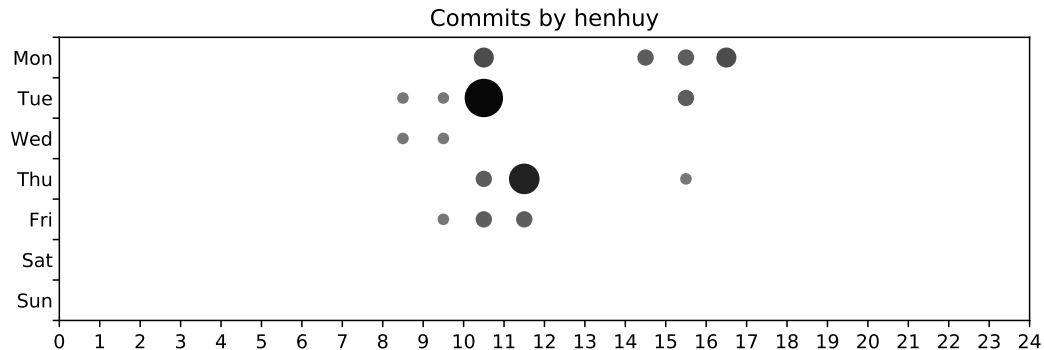


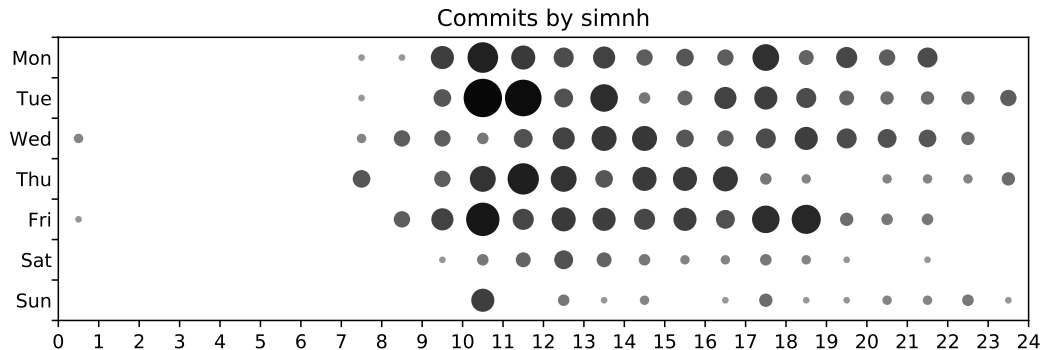
Commits by all contributors



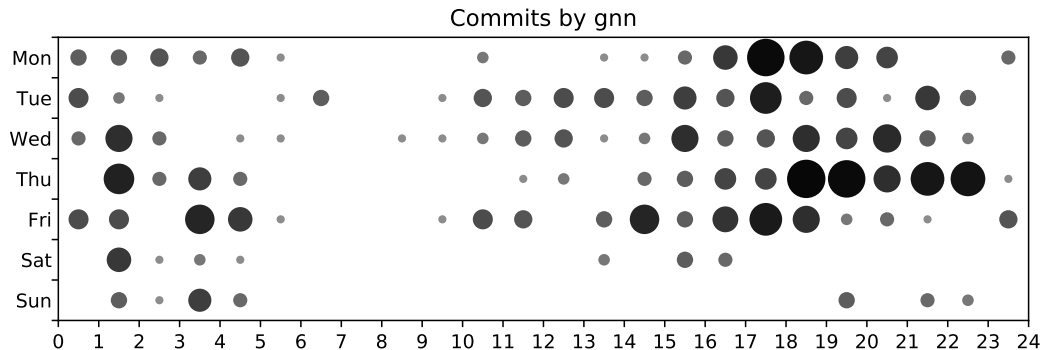
Who's working when?

9-to-5er

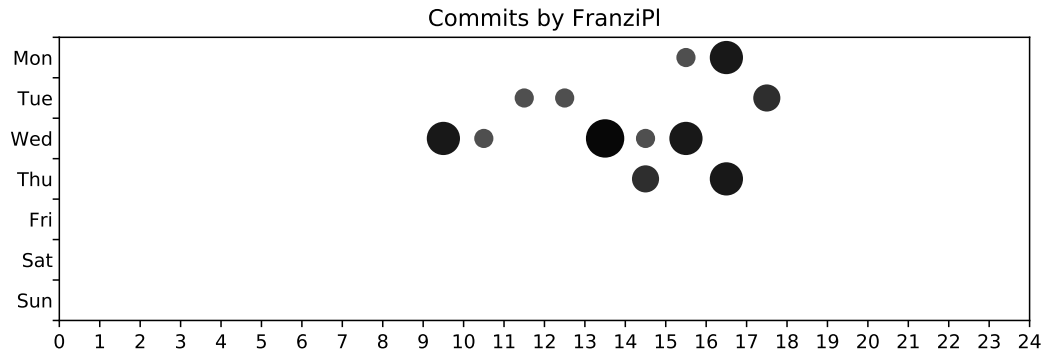




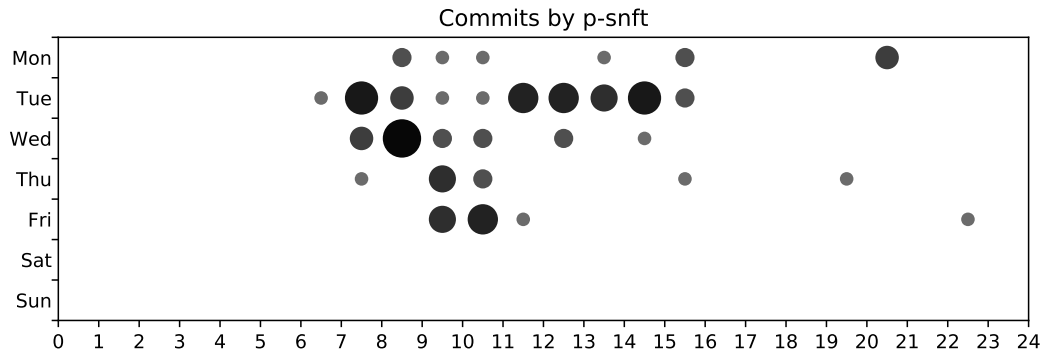
Late night hero



Not on Fridays



Earliest commit ever?



Off the working hours

