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9th International Congress on Environmental  
Modelling and Software - Ft. Collins, Colorado,  
USA - June 2018

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Jun 26th, 2:00 PM - 3:20 PM

## Data and model framework for a community Industrial Ecology Socio-environmental Model

Christopher Mutel  
cmutel@gmail.com

Stefan Pauliuk  
University of Freiburg, stefan.pauliuk@indecop.uni-freiburg.de

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Mutel, Christopher and Pauliuk, Stefan, "Data and model framework for a community Industrial Ecology Socio-environmental Model" (2018). *International Congress on Environmental Modelling and Software*. 19.  
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## Data and model framework for a community Industrial Ecology Socio-environmental Model

**Christopher Mutel<sup>a</sup>, Stefan Pauliuk<sup>b</sup>**

*a. Paul Scherrer Institut ([christopher.mutel@psi.ch](mailto:christopher.mutel@psi.ch)), b. University of Freiburg  
([stefan.pauliuk@indecot.uni-freiburg.de](mailto:stefan.pauliuk@indecot.uni-freiburg.de))*

**Abstract:** Industrial ecology is a diverse community covering many research areas and application domains; in some areas, such as Life Cycle Assessment (LCA), common databases and data formats are widely used, while in other areas, like Material Flow Assessment (MFA), there are no common data formats or databases. Recent work has shown that there is a common underlying knowledge model across most industrial ecology domains. This common socio-economic metabolism is a spatially- and temporally-resolved graph of product and service flows throughout the economy, including into and out of stocks. In this presentation, we review previous work to develop a common ontology for LCA and MFA, and describe a draft simple common format and ontology for industrial ecology data using JSON linked data. We demonstrate how this format can be applied to existing data sources, and how combining a common ontology with existing common nomenclature systems can lead to a radical reduction in the effort needed to share data. While further effort is needed to create a complete data format, including e.g. material properties and details on data entry and review, our simple data format can already be used in open source software such as [Brightway](#).

**Keywords:** ontology, MFA, LCA, Industrial Ecology, data