Democratizing global sensitivity analysis with a no-code web dashboard

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Pamphile T., Roy
Consulting Manao GmbH, Vienna, Austria

Mariia, Kozlova
LUT University, Lappeenranta, Finland

Andrea, Saltelli
UPF Barcelona School of Management, Spain

Julian, Scott, Yeomans
Schulich School of Business, York

SimDec

SimDec's dev Team

Mariia Kozlova
LUT University, Finland

Idea Germinator 🌱

Julian Scott Yeomans
York University, Canada

Ninja Professor 🥷

Pamphile Roy
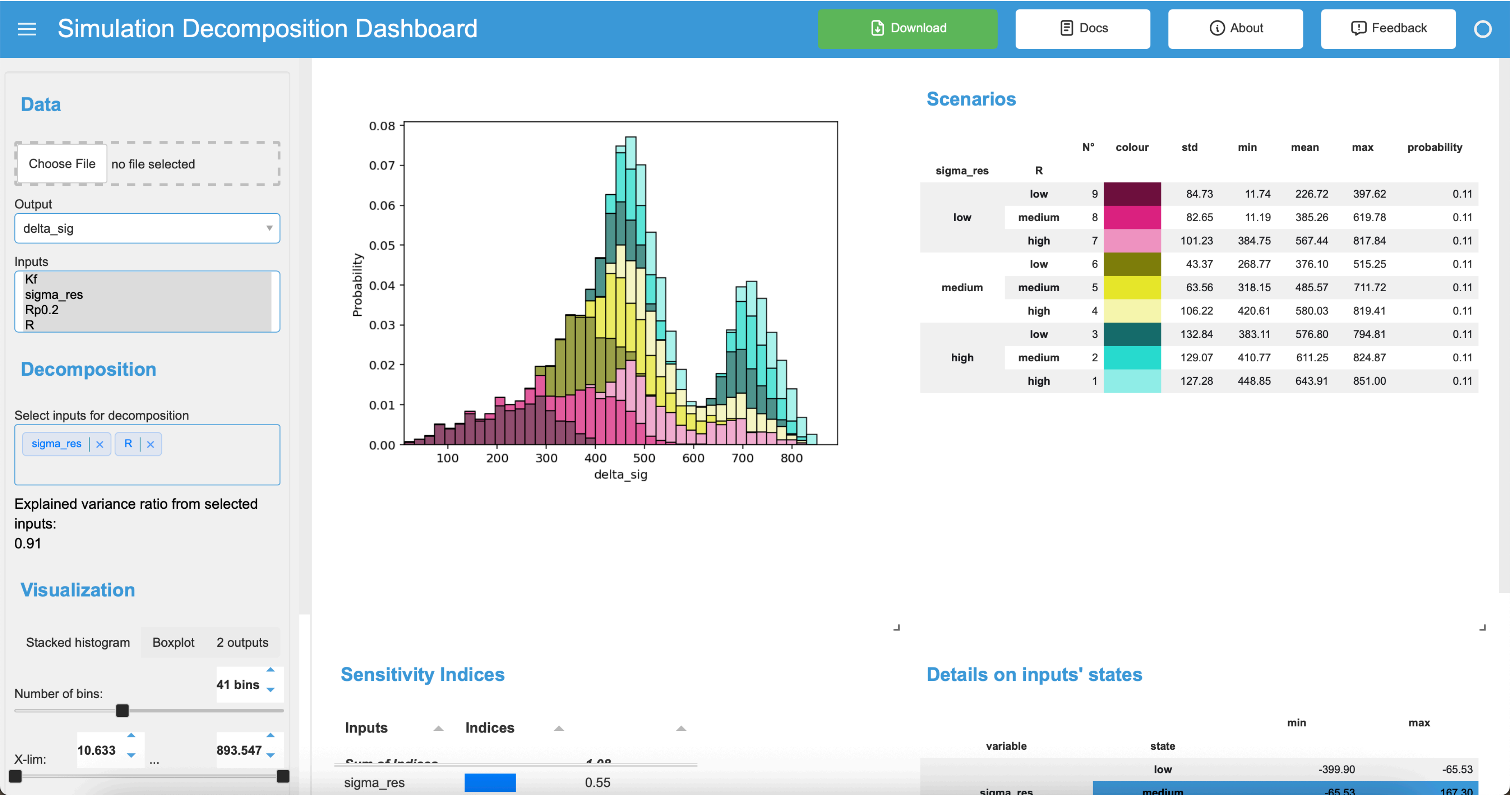Consulting Manao GmbH, Austria

Tahitian Pythonista 🏝️

Robert J. Moss
Stanford University, US

Julia package developer

Abid Alam
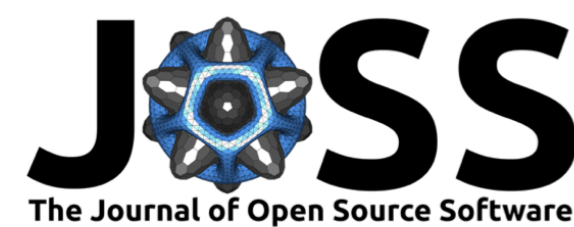Queens University, Canada

R package developer

Demo!

https://simdec.io/

Simulation Decomposition Dashboard

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Data

Choose File   no file selected

Output
delta_sig ▾

Inputs
Kf
sigma_res
Rp0.2
R

Decomposition

Select inputs for decomposition

sigma_res ✕   R ✕

Explained variance ratio from selected inputs:
0.91

Visualization

Stacked histogram   Boxplot   2 outputs

Number of bins: 41 bins

X-lim: 10.633 ... 893.547

Scenarios

sigma_res	R	N°	colour	std	min	mean	max	probability
low	low	9		84.73	11.74	226.72	397.62	0.11
	medium	8		82.65	11.19	385.26	619.78	0.11
	high	7		101.23	384.75	567.44	817.84	0.11
medium	low	6		43.37	268.77	376.10	515.25	0.11
	medium	5		63.56	318.15	485.57	711.72	0.11
	high	4		106.22	420.61	580.03	819.41	0.11
high	low	3		132.84	383.11	576.80	794.81	0.11
	medium	2		129.07	410.77	611.25	824.87	0.11
	high	1		127.28	448.85	643.91	851.00	0.11

Sensitivity Indices

Inputs	Indices	
Sum of Indices	1.08	
sigma_res		0.55

Details on inputs' states

variable	state	min	max
	low	-399.90	-65.53
sigma_res	medium	-65.53	167.30

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Simulation Decomposition in Python

Pamphile T. Roy [1]¶ **and Mariia Kozlova** [2]

1 Consulting Manao GmbH, Vienna, Austria **2** LUT Business School, LUT University, Lappeenranta, Finland ¶ Corresponding author
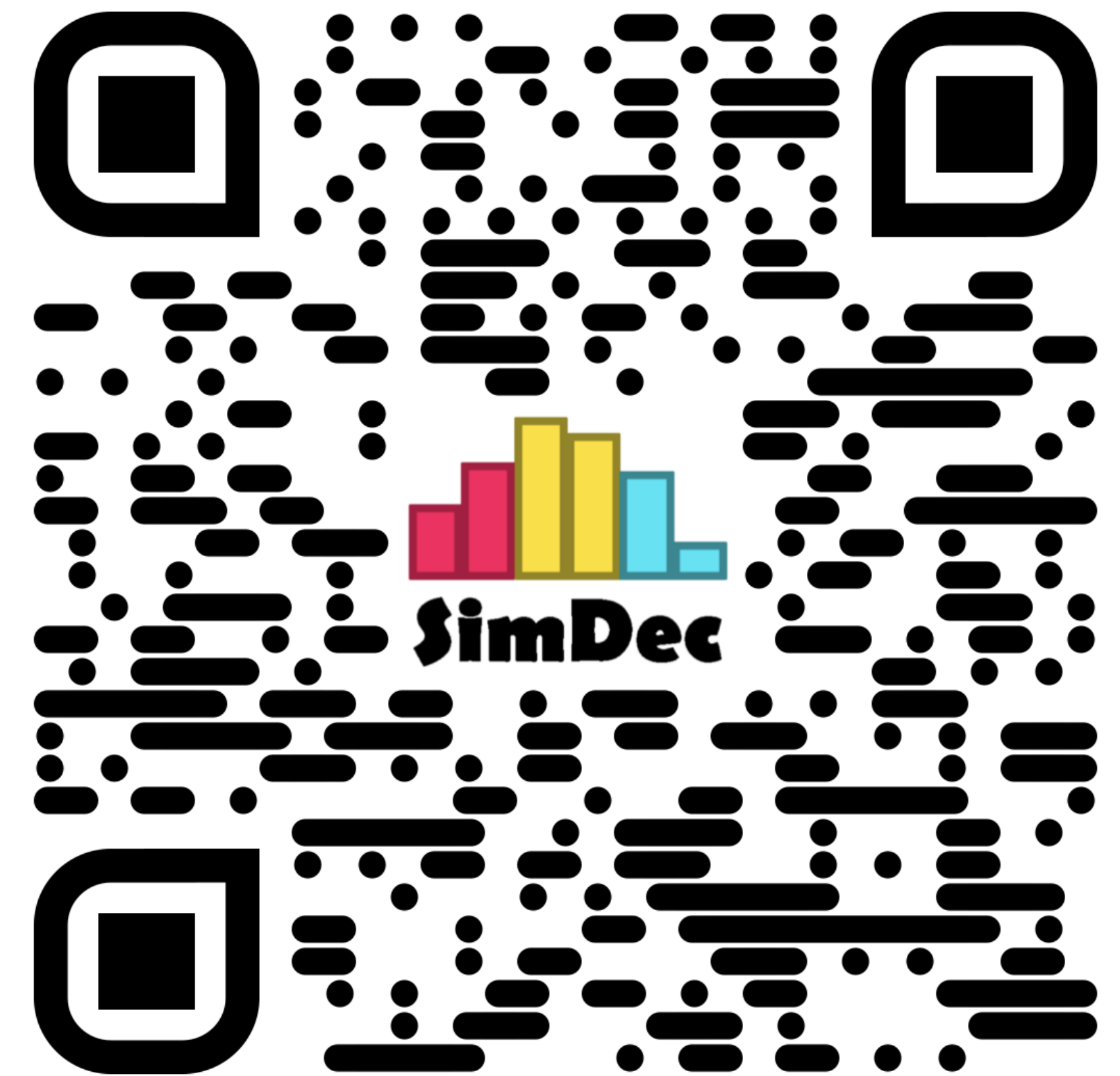
Summary

Uncertainties are everywhere. Whether you are developing a new Artificial Intelligence (AI) system, running complex simulations or making an experiment in a lab, uncertainties influence the system. Therefore, an approach is needed to understand how these uncertainties impact the system's performance.

SimDec offers a novel visual way to understand the intricate role that uncertainties play. A clear Python Application Programming Interface (API) and a no-code interactive web dashboard make uncertainty analysis with SimDec accessible to everyone.

Routledge Open Business and Economics

SENSITIVITY ANALYSIS FOR BUSINESS, TECHNOLOGY, AND POLICYMAKING

MADE EASY WITH SIMULATION DECOMPOSITION (SIMDEC)

Edited by
Mariia Kozlova and Julian Scott Yeomans
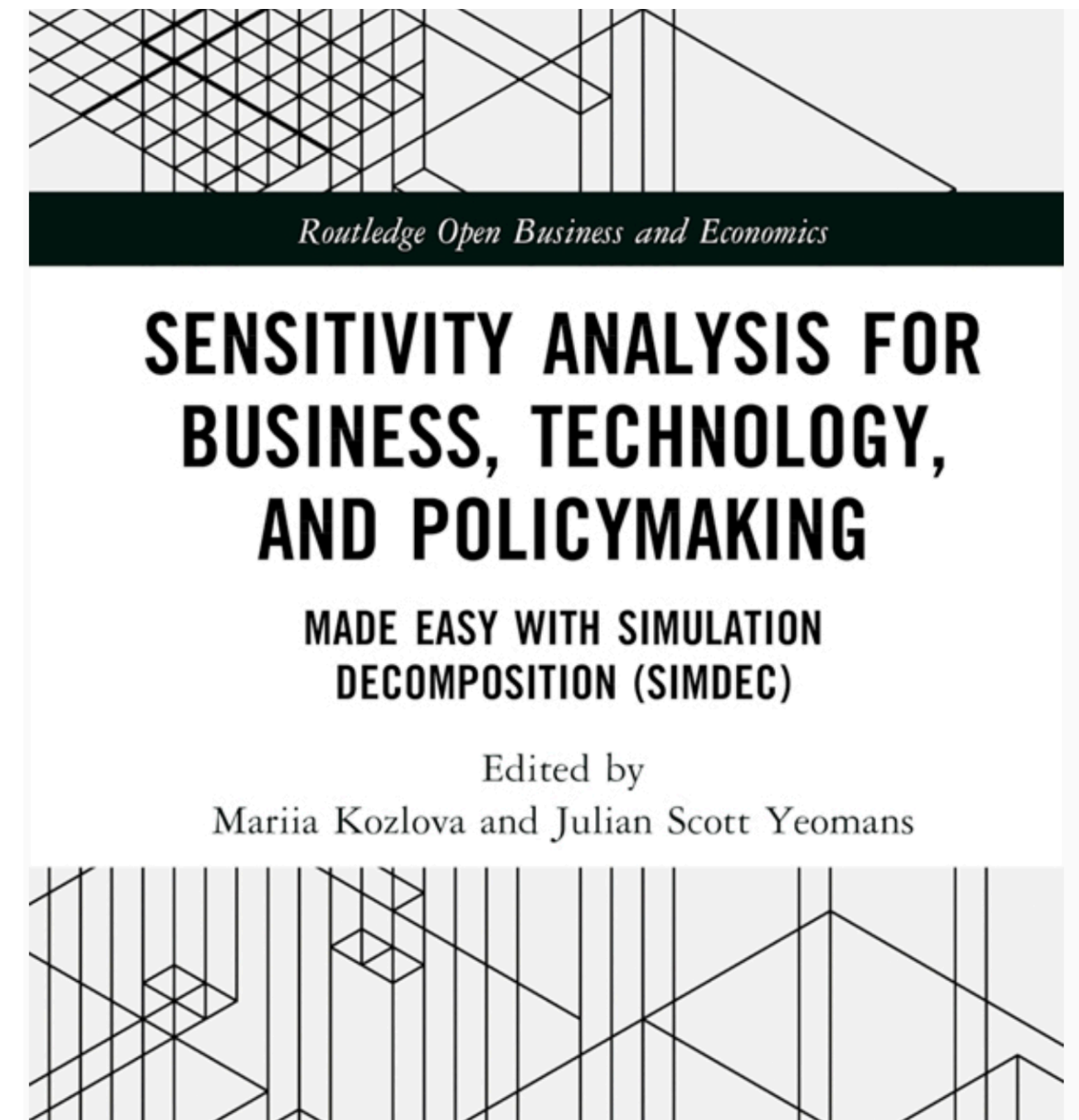
SimDec

Simulation Decomposition

Scientific Python

Community | developed
| owned

Join the community

Ideas, issues, PR, reviews, discussions, issue management: *every contribution matters*… Join us!

https://simdec.fi/

Thank You!