

ADDITIONAL MATERIAL TO:

Olteanu, Alin; Rabitz, Florian; Jurkevičienė, Jurgita; Budžytė, Agnė 2019.

The case for a semiotic method in Earth system science:

Semantic networks of environmental research

Sign Systems Studies 47(3/4): 552–589.

<https://doi.org/10.12697/SSS.2019.47.3-4.09>

TABLES

Table 1: *Weighted degree centrality of central concepts*

Climate	Atmosphere	Water	Temperature	Surface	Soil	Year
3.68	14.24	9.91	2.74	9.89	1.29	1990
13.52	10.28	10.32	12.52	9.09	4.9	1991
10.99	9.07	9.05	12.86	8.21	6.11	1992
17.1	9.86	10.37	13.73	9.54	6.59	1993
14.52	9.28	9.8	9.96	7.81	8.9	1994
15.22	11.44	8.9	14.03	10.86	8.86	1995
14.17	9.57	12.07	12.83	9.55	9.14	1996
18	8.69	11.51	13.51	8.43	9.46	1997
17.02	13.59	12.09	15.37	9.81	14.04	1998
15.64	10.48	11.55	12.79	10.49	9.42	1999
18.36	13.86	11.98	14.31	12.05	11.62	2000
15.18	8.3	9.06	10.64	7.29	9.56	2001
17.55	11.73	11.79	12.91	9.75	9.12	2002
17.84	10.68	9.49	11.26	8.72	10.72	2003
18.24	10.98	11.64	13.95	9.32	11.72	2004
18.21	10.34	11.96	14.35	9.665	10.31	2005
19.12	9.28	10.56	13.13	8.48	9.43	2006
21.63	8.03	9.73	14.18	8.24	9.15	2007
21.49	8.46	10.74	13.91	8.16	9.03	2008
22.49	8.09	11.38	15.24	8.9	9.21	2009
22.27	7.93	10.81	13.55	8.19	7.06	2010
25.16	7.02	11.05	13.79	8.28	7.75	2011
23.70	6.93	10.01	14.34	7.78	6.95	2012
25.04	6.84	11.68	14.68	7.84	6.12	2013
23.38	5.43	10.79	13.22	7.83	5.92	2014
23.95	6.32	10.61	12.17	7.12	6.16	2015
23.59	5.57	10.42	12.12	7.75	6.63	2016
23.94	6.42	11.05	12.89	7.0	6.42	2017

Table 2: *Weighted degree centrality of concepts of main interest*

Climate	System	Ecosystem	Model	Biodiversity	Signal	Signification	Change	Year
3.68	6.81	0.58	4.58	No data	0.26	5.87	13.1	1990
13.52	7.4	0.88	12.1	No data	1.83	7.75	13.11	1991
10.99	3.82	1.02	12.23	No data	2.46	6.77	12.38	1992
17.10	5.8	3.37	15.09	0.03	1.94	10.04	18.55	1993
14.52	5.9	3.03	13.15	0.16	2.05	8.28	14.32	1994
15.22	5.92	2.83	15.28	0.06	0.86	8.85	18.51	1995
14.17	5.28	4.93	18.25	0.35	1.93	7.85	18.19	1996
18	6.87	4.55	15.43	0.08	0.89	10.22	17.68	1997
17.02	7.93	8.06	17.96	0.71	1.26	12.53	20.05	1998
15.64	6.98	5.56	15.85	0.16	2.14	10.57	18.52	1999
18.36	9.05	7.13	19.75	0.17	2.14	11.75	20.12	2000
15.18	6.23	4.76	14.67	0.27	1.36	10.83	18.05	2001
17.55	6.99	8.57	17.5	0.69	1.9	14.63	21.73	2002
17.84	7.41	8.17	17.77	0.38	2.04	12.59	19.84	2003
18.24	7.62	9.25	17.83	0.55	1.36	12.75	21.67	2004
18.21	7.81	9.74	18.25	0.97	1.97	13.26	21.37	2005
19.12	7.46	9.57	17.04	0.97	1.82	12.31	21.13	2006
21.63	7.86	7.26	18.3	1.02	1.8	11.83	23.09	2007
21.49	7.21	8.98	19.08	1.18	1.74	13.03	22.49	2008
22.49	7.67	8.15	18.7	0.94	2.17	14.32	23.79	2009
22.27	7.69	7.47	17.06	1.22	1.87	12.23	24.19	2010
25.16	8.35	8.42	18.09	1.53	2.24	12.67	26.49	2011
23.70	7.74	8.17	18.7	1.91	2.27	13.59	24.62	2012
25.04	8.66	7.87	19.36	1.72	2.41	13.43	27.16	2013
23.38	8.59	7.56	18.24	2.3	1.97	13.33	25.97	2014
23.95	9.24	9.29	19.01	2.38	2.03	12.31	25.85	2015
23.59	9.53	9.13	19.89	2.16	1.79	12.74	25.44	2016
23.94	9.15	10.11	19.29	2.57	0.26	12.26	25.41	2017

Table 3: *Edge weights for climate-model, climate-change, change-model and model-signification*

Climate-Model	Climate-Change	Change-Model	Model-Signification	
0.06	0.04	0.06	0.02	1990
0.14	0.13	0.14	0.05	1991
0.14	0.15	0.14	0.05	1992
0.22	0.2	0.22	0.09	1993
0.17	0.7	0.17	0.07	1994
0.20	0.16	0.2	0.08	1995
0.23	0.18	0.23	0.08	1996
0.17	0.2	0.17	0.07	1997
0.21	0.21	0.21	0.1	1998
0.20	0.16	0.2	0.07	1999
0.21	0.21	0.21	0.11	2000
0.17	0.15	0.17	0.1	2001
0.21	0.18	0.21	0.13	2002
0.19	0.2	0.19	0.12	2003
0.21	0.18	0.21	0.11	2004
0.21	0.2	0.21	0.11	2005
0.19	0.18	0.19	0.09	2006
0.22	0.23	0.22	0.1	2007
0.23	0.23	0.23	0.11	2008
0.22	0.22	0.22	0.12	2009
0.21	0.21	0.21	0.1	2010
0.25	0.25	0.25	0.11	2011
0.23	0.25	0.23	0.12	2012
0.26	0.26	0.26	0.12	2013
0.23	0.22	0.23	0.12	2014
0.23	0.24	0.23	0.11	2015
0.24	0.24	0.24	0.12	2016
0.24	0.24	0.24	0.12	2017
0.21	0.2	0.21	0.12	2018

FIGURES

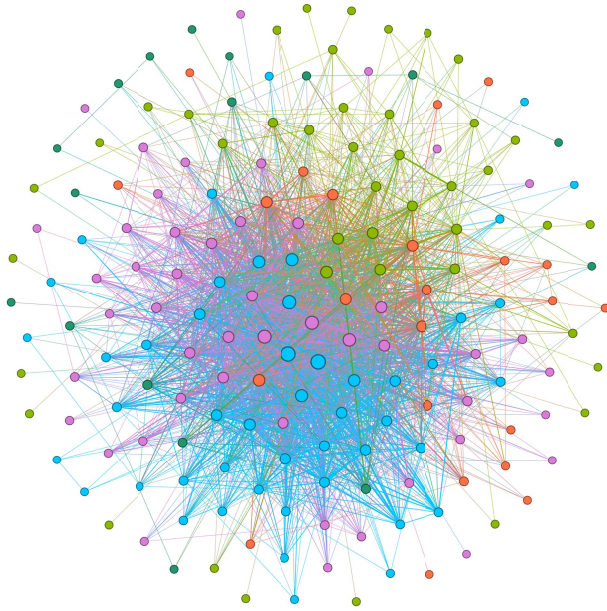


Figure 1. *Semantic network of Earth system science 1990*

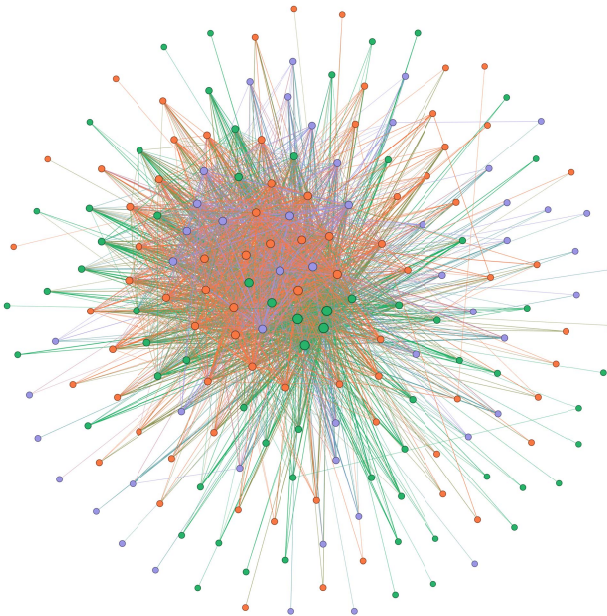


Figure 2. *Semantic network of Earth system science 2000*

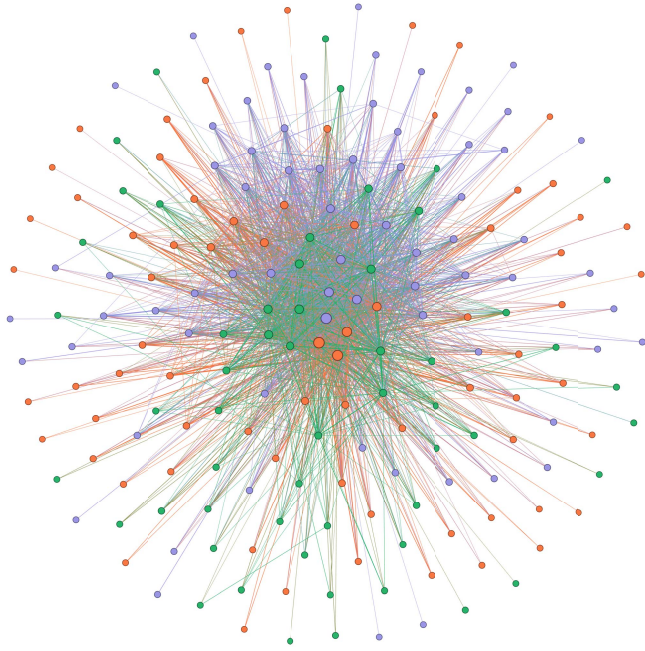


Figure 3. *Semantic network of Earth system science 2010*

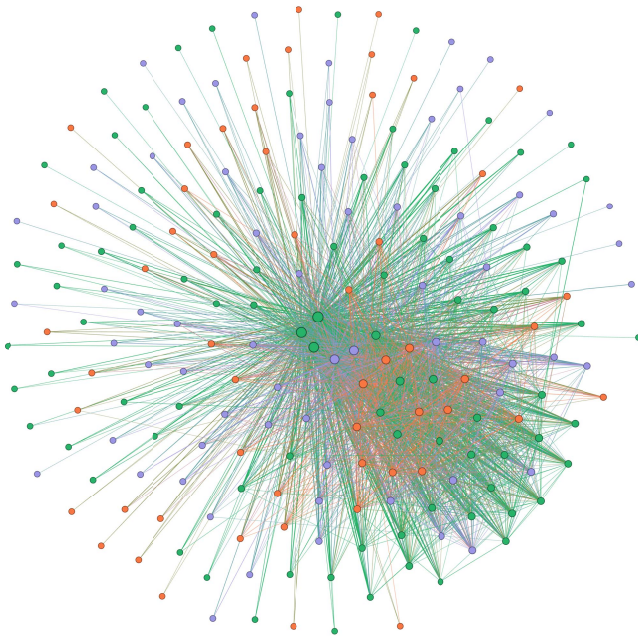


Figure 4. *Semantic network of Earth system science 2017*