PROMETHEE

METHODS

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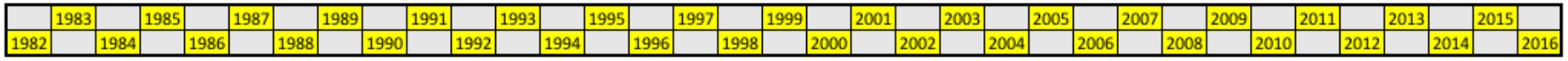
PROMETHEE
METHODS

A PROMETHEE Software Timeline



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http://www.promethee-gaia.net

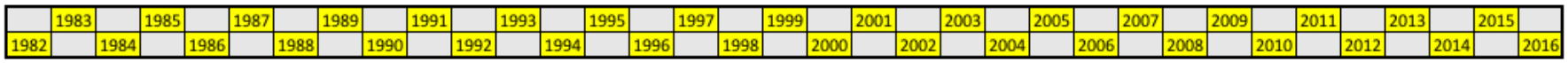
Who/What is **PROMETHEE**?

- Multicriteria decision aid method
- Outranking method (ELECTRE)
- Prescriptive (**PROMETHEE** rankings)
- Descriptive (**GAIA**)
- Interactive (sensitivity analysis)
- Visual 😎 – KISS 😜
- Over 1300 papers published 1982-2016.
  - Median year of publication: 2011

PROMETHEE – When?

PROMETHEE I and II methods
(first presentation at Un. Laval)

1st PROMETHEE
Workshop in Brussels



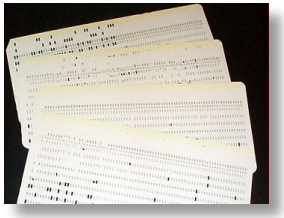
GAIA method

PROMETHEE Days 2016
HEC Montréal

Why **PROMETHEE**?

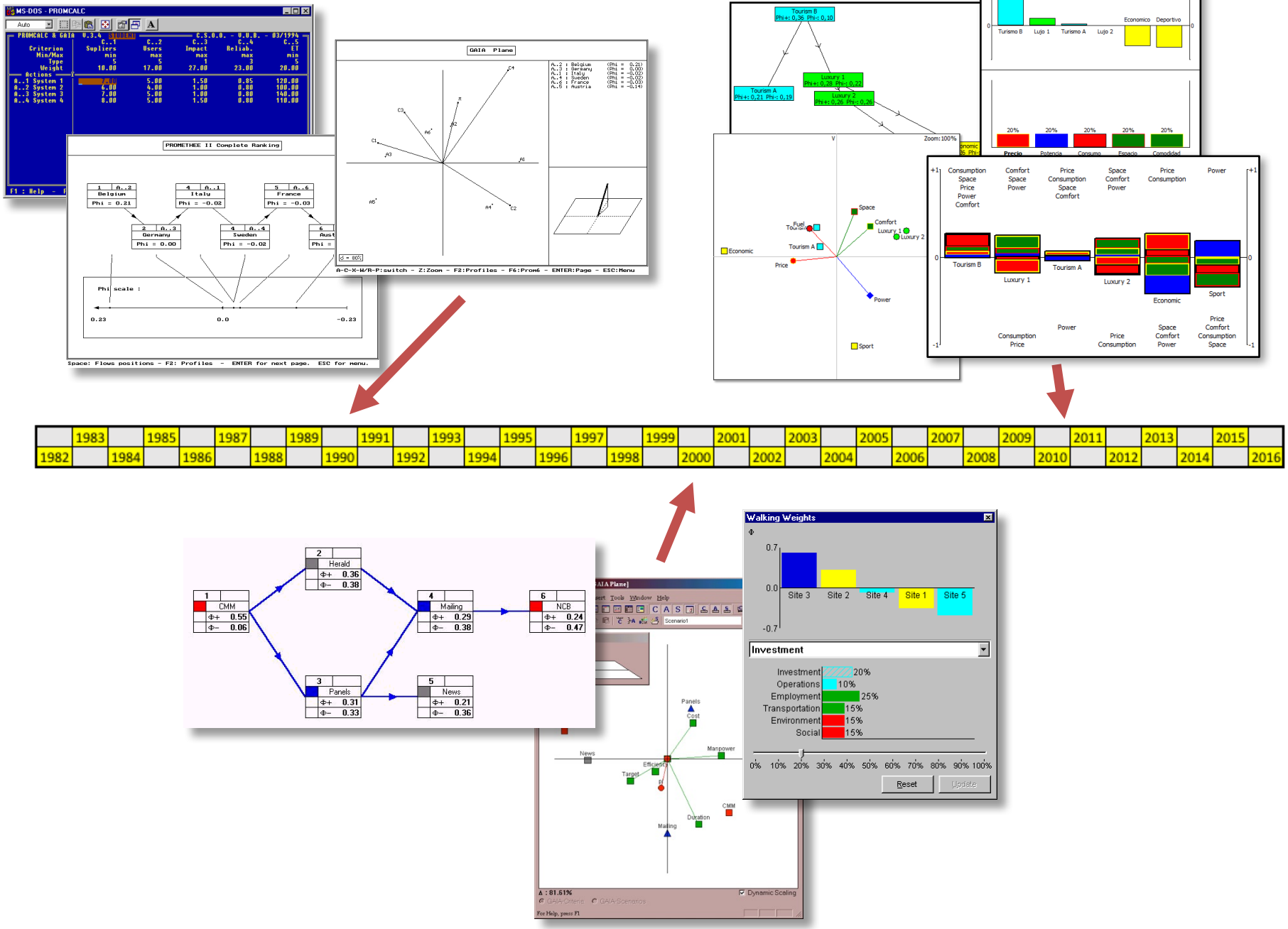
- KISnS 😜
- Enthusiasm (JPBr)
- Software development
  - From 1984 with **PromCalc**
  - Early GUI
  - **Decision Lab 2000** (developed in Montréal)
  - **Visual PROMETHEE** today
  - Involvement with users
  - Involvement with research

PROMETHEE Hardware

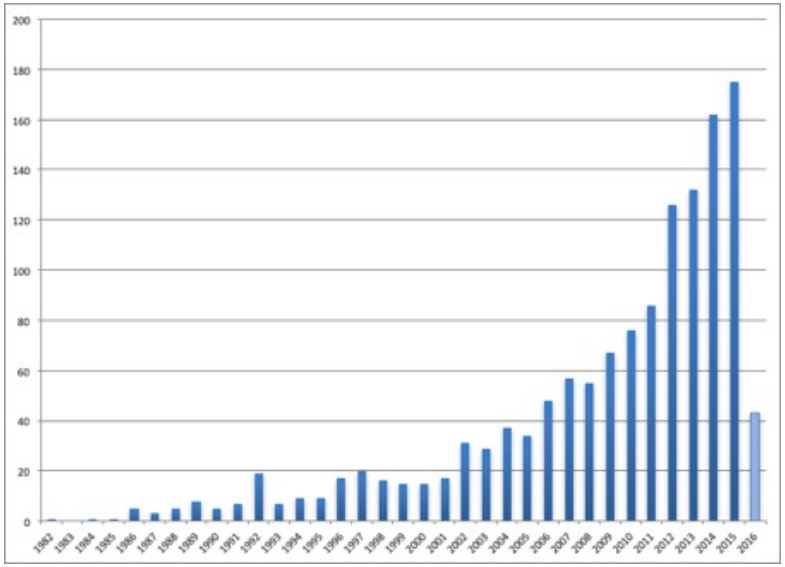


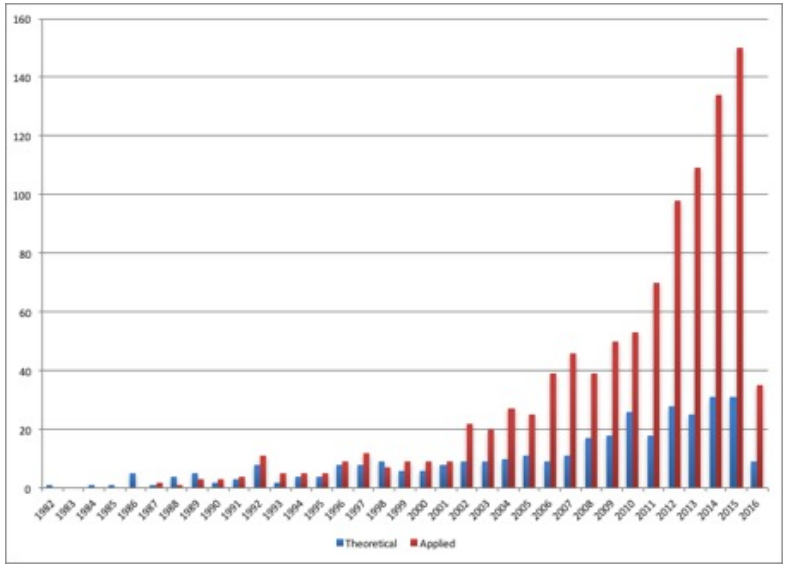
	1983		1985		1987		1989		1991		1993		1995		1997		1999		2001		2003		2005		2007		2009		2011		2013		2015	
1982		1984		1986		1988		1990		1992		1994		1996		1998		2000		2002		2004		2006		2008		2010		2012		2014		2016

PROMETHEE Software



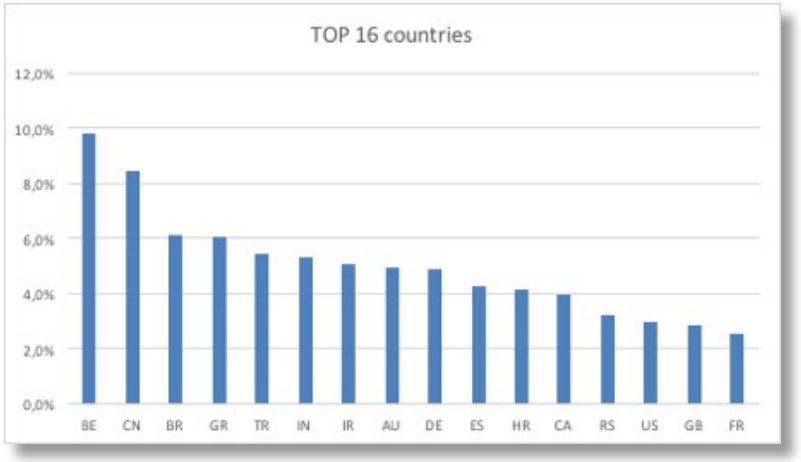
PROMETHEE Timeline

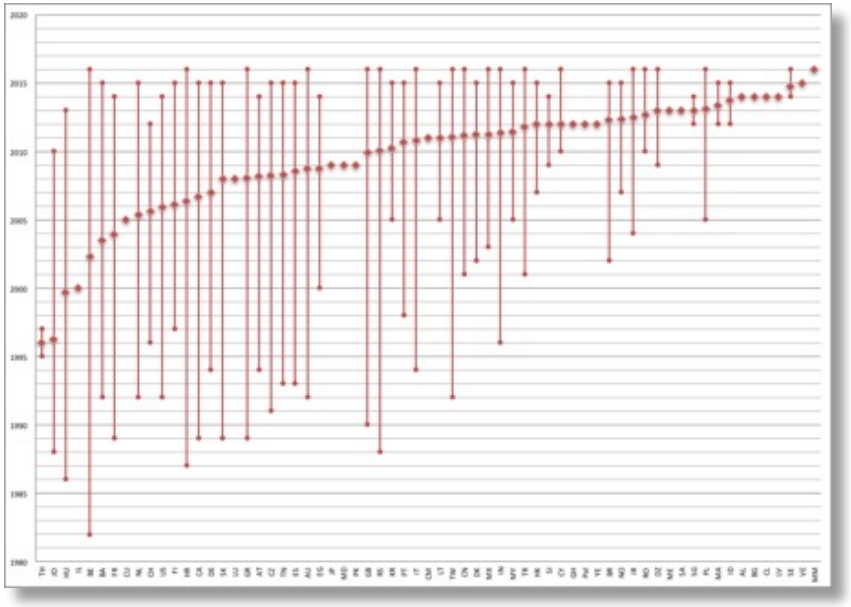




- Over 1300 papers published
  - 75% applied – 25% theoretical
- Median year: 2011
- Over 2300 authors from 78 countries

PROMETHEE Worldwide





- First authors from 65 countries
- Canada in the Top 12

PROMETHEE QUIZZ

Preference functions

- ***Fact or fiction?***
- PROMETHEE only works with fixed indifference and preference thresholds (contrarily to ELECTRE)
- **Fiction:**
- Variable (percent) thresholds were introduced in PROMCALC.

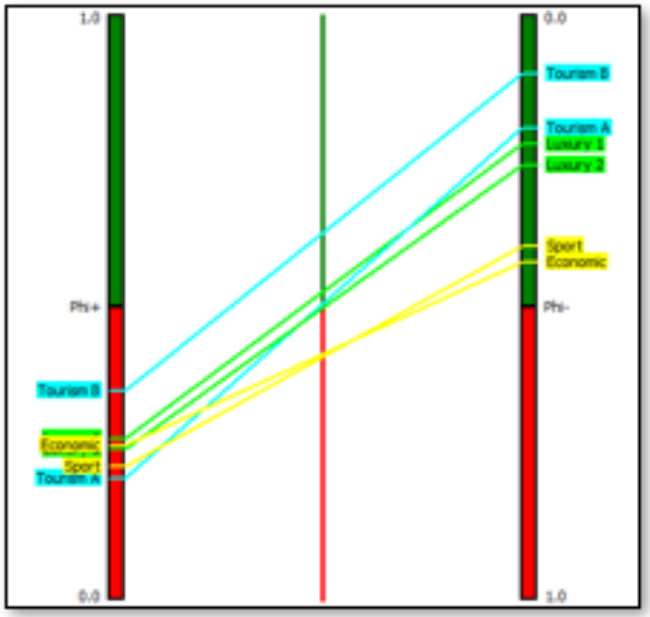
Hierarchy of Criteria

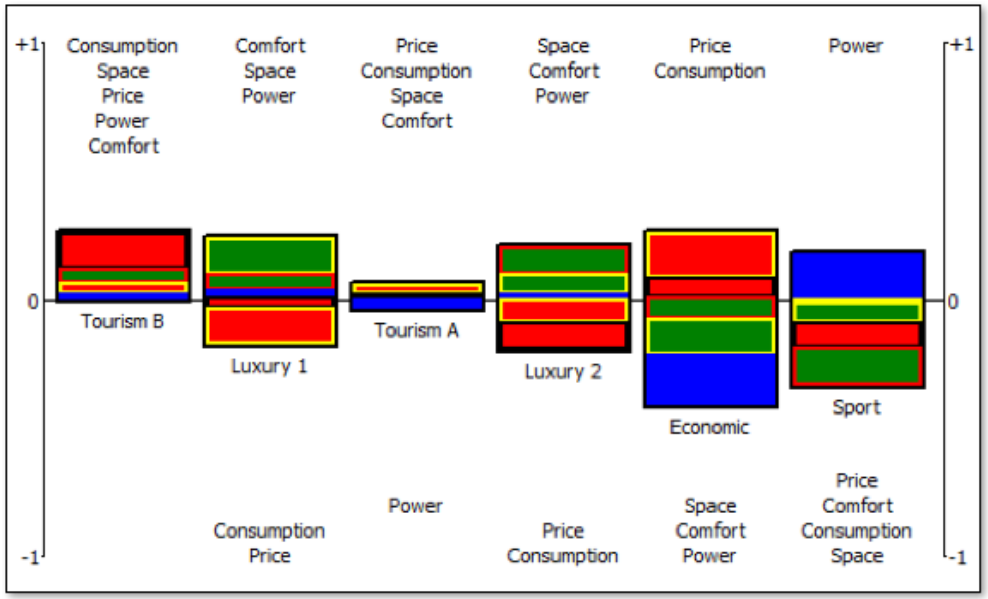
- ***Fact or fiction?***
- It is not possible to hierarchize criteria with **PROMETHEE**.
- **Fiction:**
- 2-level hierarchy introduced in **Decision Lab**.
- 3-level hierarchy in **Visual PROMETHEE**.

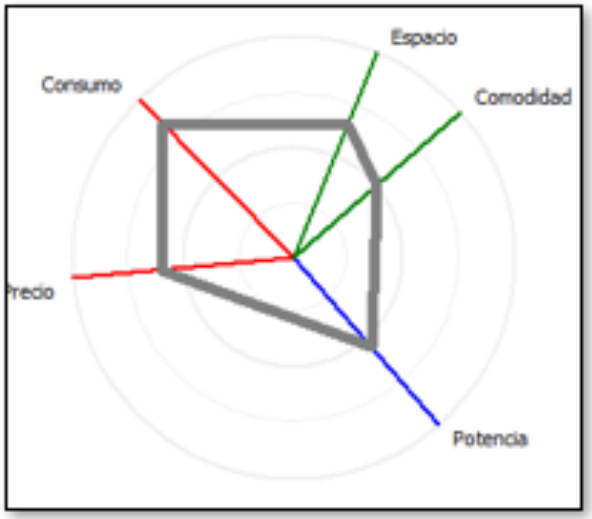
GDSS

- ***Fact or fiction?***
- **PROMETHEE is for single decision-maker problems only.**
- **Fiction:**
- **GDSS PROMETHEE-GAIA** model introduced in **Decision Lab**.
- Enhanced in **Visual PROMETHEE**.

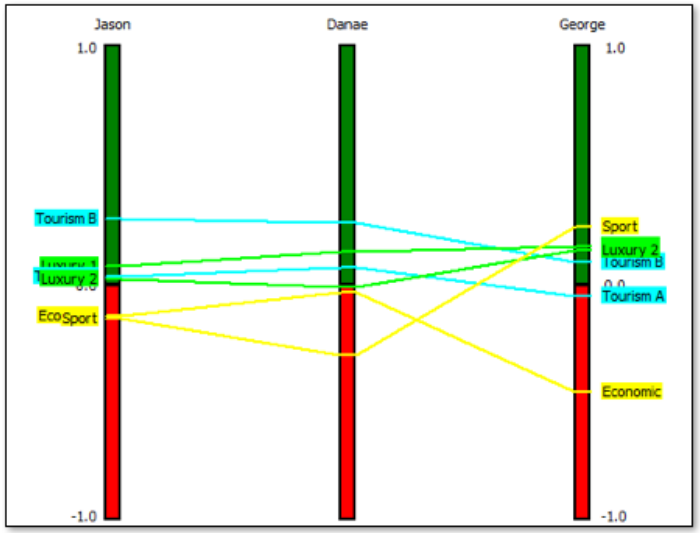
New Visualizations

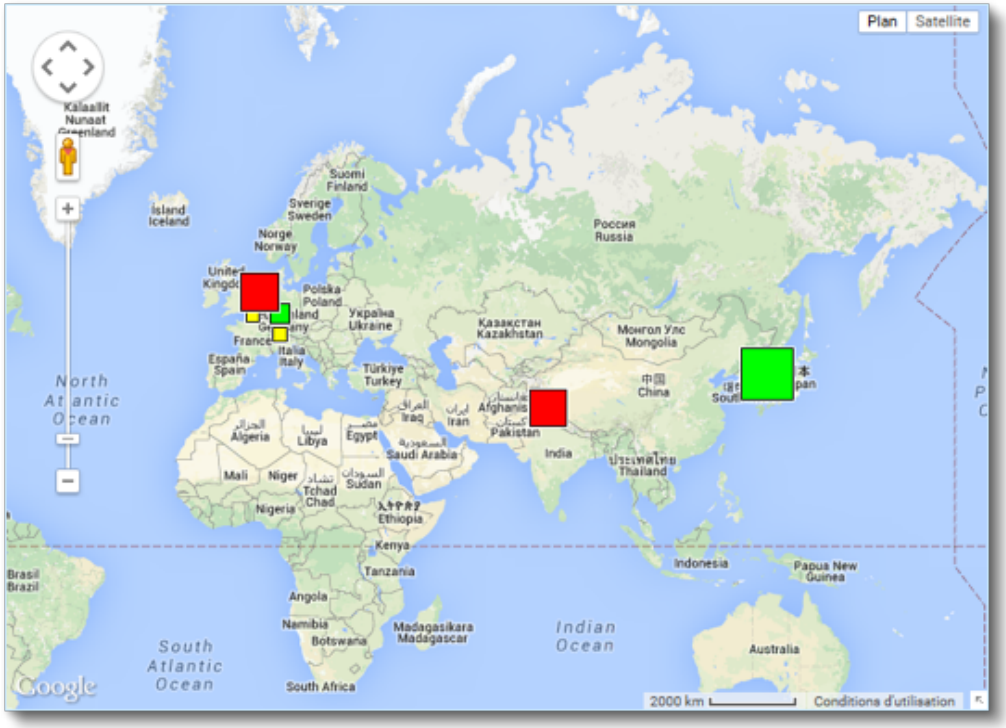




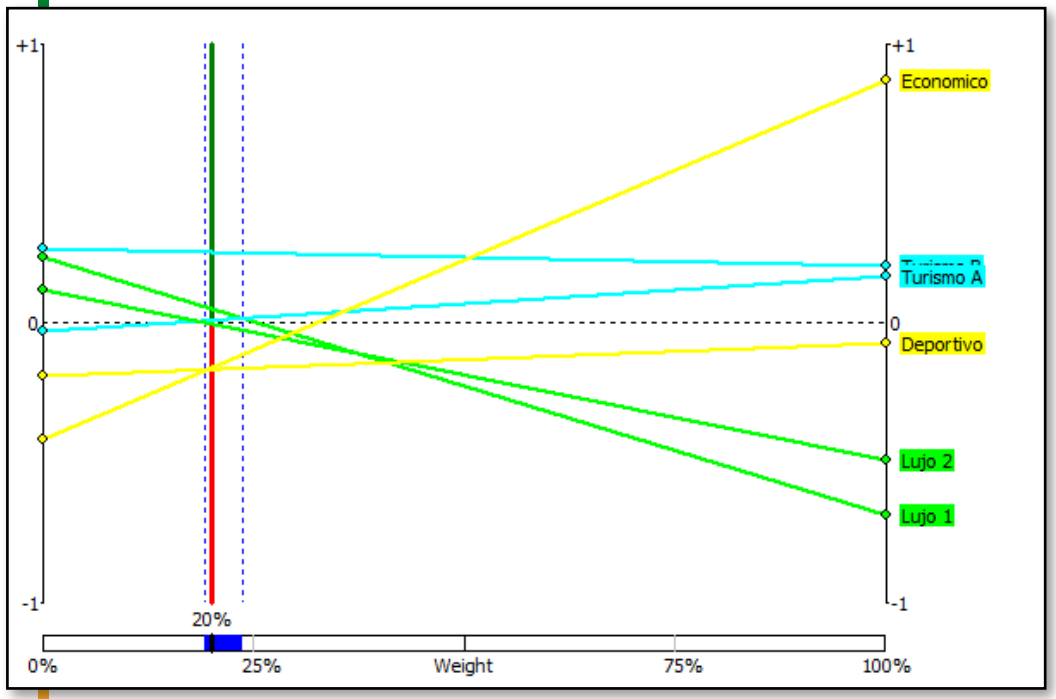


New Visualizations

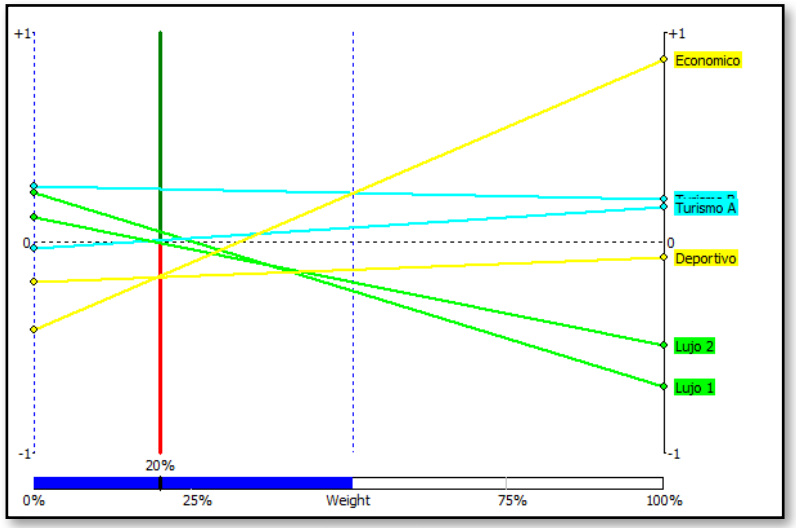




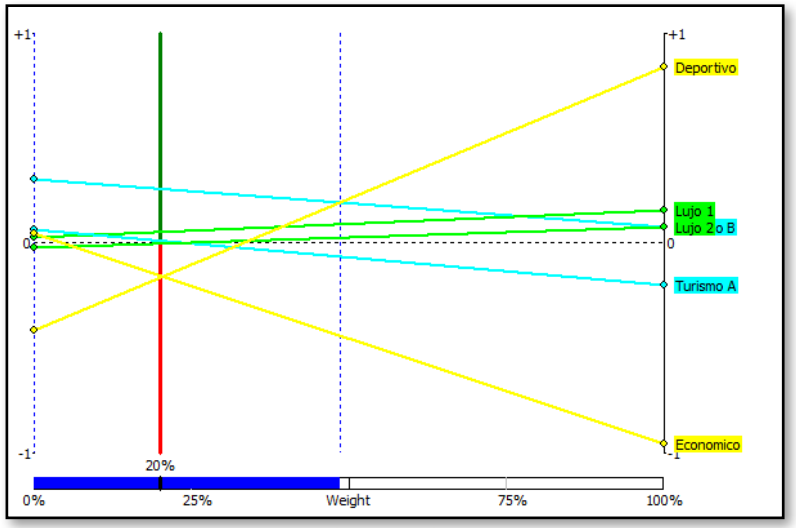
Visual Stability Intervals



VSI for « Price » (level 6):
[19.20% , 23.70%]



VSI for « Price » (level 1): [0.00% , 50.68%]



VSI for « Power » (level 1): [0.00% , 48.65%]

Other newer features…

- Missing values
- Efficiency Analysis
- Multicriteria Sorting
- Bank Adviser
- …
- **PROMETHEE** Tutorial:
  - Session WA1 – Wednesday 10:30-12:10

Next…

- First: Thanks to all of you!
- Continue…
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  - **PROMETHEE** Days