Lessons from IFAC World Congres in Toulouse

Dimitri PEAUCELLE / Дмитрий Жанович Посель -Коновалов

LAAS-CNRS - Université de Toulouse - FRANCE

homepages.laas.fr/peaucell

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IFAC World Congress 2017 Statistics

Country/Region	Contributed and invited Submissions (# Corresponding Authors)	Contributed and invited papers in Program (# Corresponding Authors)	Contributed and Invited Papers in Program (# All Authors)
Total	**4260**	**2724**	**8956**
France	748	506	1783
Germany	314	238	741
China	430	208	709
USA	310	216	679
Italy	239	184	641
United Kingdom	163	109	334
Netherlands	115	92	296
Japan	165	101	293
Spain	107	71	273
Sweden	98	81	258
Brazil	131	69	246
Russia	152	89	209
Canada	95	60	181
Australia	72	55	176
Mexico	96	56	166

IFAC World Congress 2017 Statistics

Country	Submitted # Corresponding authors	Accepted # Corresponding authors	Acceptance rate	Accepted # Authors	Ratio # Authors / # Corresponding authors
World	**4260**	**2724**	**64%**	**8956**	**329%**
France	748	506	68%	1783	**352%**
Germany	314	238	**76%**	741	311%
China	430	208	48%	709	341%
USA	310	216	70%	679	314%
Italy	239	184	**77%**	641	**348%**
UK	163	109	67%	334	306%
Netherlands	115	92	**80%**	296	322%
Japan	165	101	61%	293	290%
Spain	107	71	66%	273	**385%**
Sweden	98	81	**83%**	258	319%
Brazil	131	69	53%	246	**357%**
Russia	**152**	**89**	**59%**	**209**	**235%**
Canada	95	60	63%	181	302%
Australia	72	55	**76%**	176	320%
Mexico	96	56	58%	166	296%

🔵 Papers from english speaking countries do not have significant advantage

🔵 Reasons for having significantly less authors per corresponding authors for Russia ?

🔻 Less authors per paper ?

🔻 Less Russian authors in papers with foreign corresponding authors ?

🔺 Suggestion : having more co-authors with different view-points

Different styles in presenting results

- Expose of the result and its proof on a simple example,

  then give the Theorem,

  and leave the reader to believe the proof is similar to the example

- Expose the author's reasoning (starting form B how he·she found A)

  then give the Theorem $A \Rightarrow B$

  and an illustrative example

- Formulate the abstract Theorem and all the assumptions

  then prove the Theorem with all details

  and give an illustrative example

- Formulate the Theorem in a simple manner (no details about assumptions)

  then prove the Theorem with all details

  and give an illustrative example

▲ All styles have advantages ▼ but all have defects

Importance of appropriate notations

▽ Avoid using same letters for different mathematical objects

▽ Stay as close as possible to notations used by those you want to convince

▲ Notations implicitly contain assumptions

$$A \succ 0 \quad , \quad G(s) = D + C(sI - A)^{-1}B \quad ...$$

▲ Try to build compact readable formulas (providing the key idea)

▲ A good formula is better than a complicated sentence

If the symmetric part of a positive definite matrix multiplied by the matrix of the system dynamics is negative definite, then one proves that the given linear system is stable :

$$\exists P \succ 0, (PA)^{\mathcal{S}} \prec 0 \quad \Rightarrow \quad \dot{x} = Ax \text{ is stable}$$

"Russian science is non causal"

🔼 Lot of interesting results in Russian litterature

🔽 Results are not known, not understood or not appropriately appreciated

🔼 Russian scientists are proud of the work of their past colleagues

🔽 Need for popularization of currently developed results

        Not only cite colleagues, but rephrase and illustrate their results