

CROSS CULTURAL UNDERSTANDING IN PORTUGAL-CHINA SCIENTIFIC RESEARCH COOPERATION



LISBON
SCHOOL OF
ECONOMICS &
MANAGEMENT
UNIVERSIDADE DE LISBOA

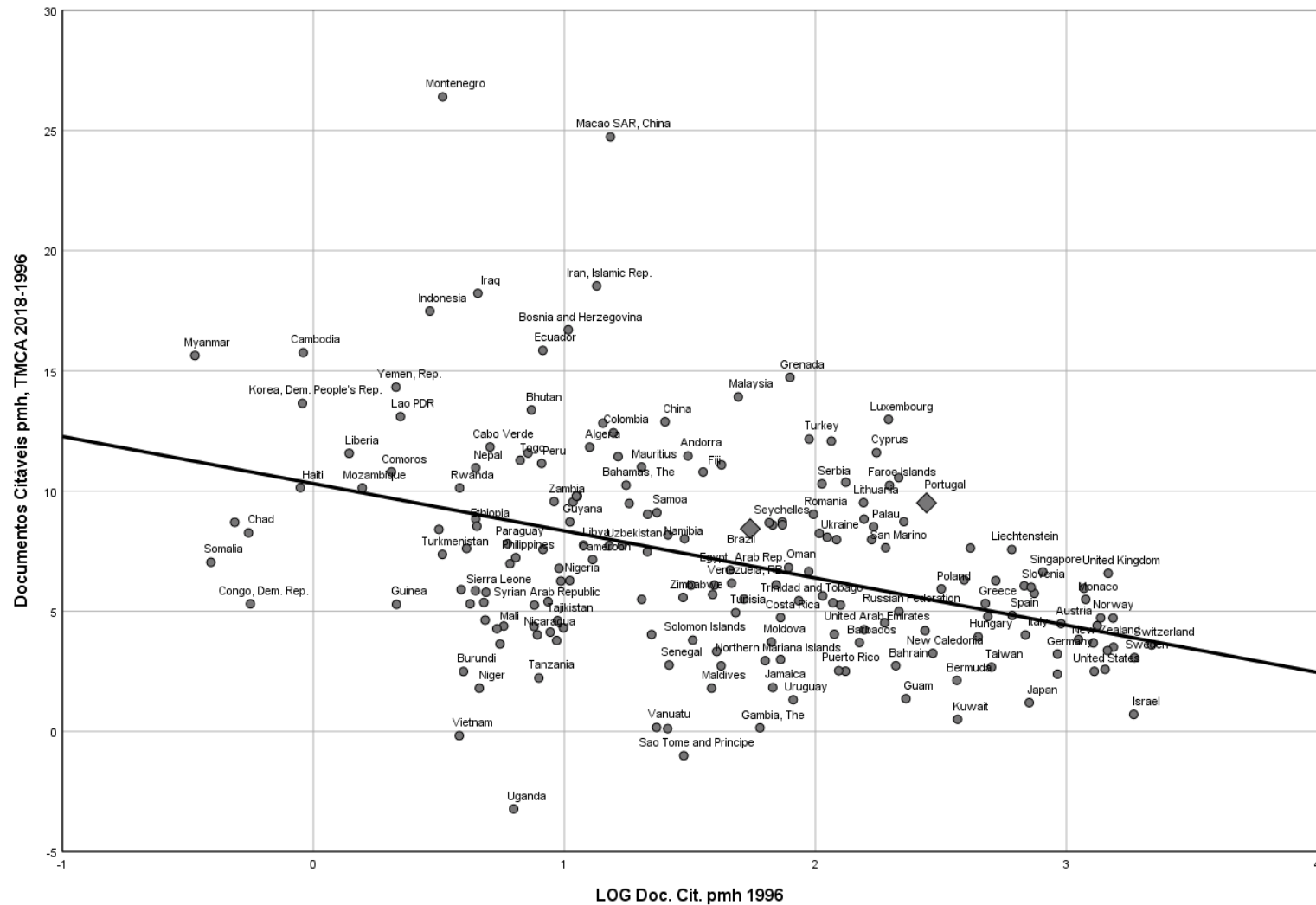
MANUEL MIRA GODINHO

@Cross Cultural Management Portugal-China Conference

ISEG, 6 November 2020

Agenda:

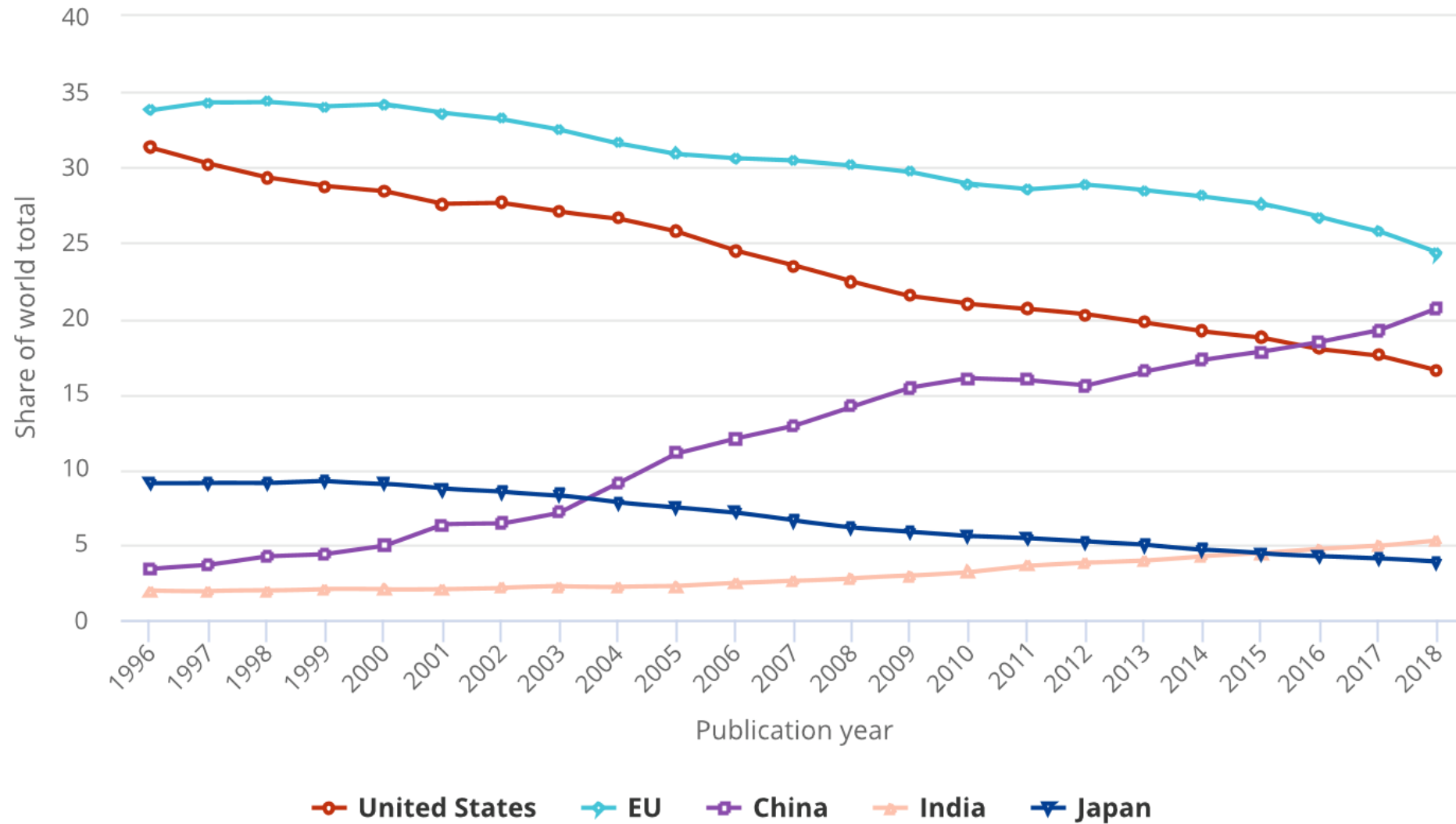
- **Background: Global research performance**
- **Patterns of co-authorship Portugal-China**



- 183 countries
- Y Axis: CAGR of Scientific Publications per million inhabitants, 1996-2018
- X Axis: Logarithm of Scientific Publications per million inhabitants in 1996

FIGURE 5A-3

S&E articles, by global share of selected region, country, or economy: 1996–2018



TOP40 publishing countries 2019

RANK	Country	Citable documents	Citations	Citations per document
1	China	669877	544310	0,8
2	United States	605796	582779	0,86
3	United Kingdom	188259	207745	0,98
4	India	173574	101838	0,54
5	Germany	167305	167682	0,91
6	Japan	123834	83421	0,63
7	Italy	113243	117534	0,93
8	France	109099	104040	0,87
9	Canada	104950	110142	0,95
10	Russian Federation	108786	42097	0,38
11	Australia	100527	116738	1,06
12	Spain	93133	87368	0,87
13	South Korea	86242	66127	0,74
14	Brazil	80430	45929	0,54
15	Iran	62836	54671	0,84
16	Netherlands	58783	74321	1,15
17	Poland	47450	34722	0,69
18	Turkey	47226	29044	0,58
19	Switzerland	44583	59216	1,21
20	Sweden	41554	48756	1,09
21	Indonesia	44194	10481	0,24
22	Taiwan	36578	27530	0,72
23	Malaysia	35111	23953	0,66
24	Belgium	32215	39309	1,12
25	Denmark	27808	35460	1,17
26	Portugal	26505	23936	0,83
27	South Africa	26263	20668	0,74
28	Austria	25404	27944	1
29	Saudi Arabia	26772	29040	1,05
30	Mexico	25823	16923	0,61
31	Czech Republic	24416	18954	0,74
32	Egypt	24356	18633	0,74
33	Norway	23311	25013	0,99
34	Pakistan	23461	21787	0,9
35	Hong Kong	23051	28642	1,18
36	Israel	21345	21424	0,92
37	Singapore	21513	28852	1,25
38	Finland	20943	22389	1
39	Greece	18739	18998	0,92
40	Thailand	18877	11609	0,59

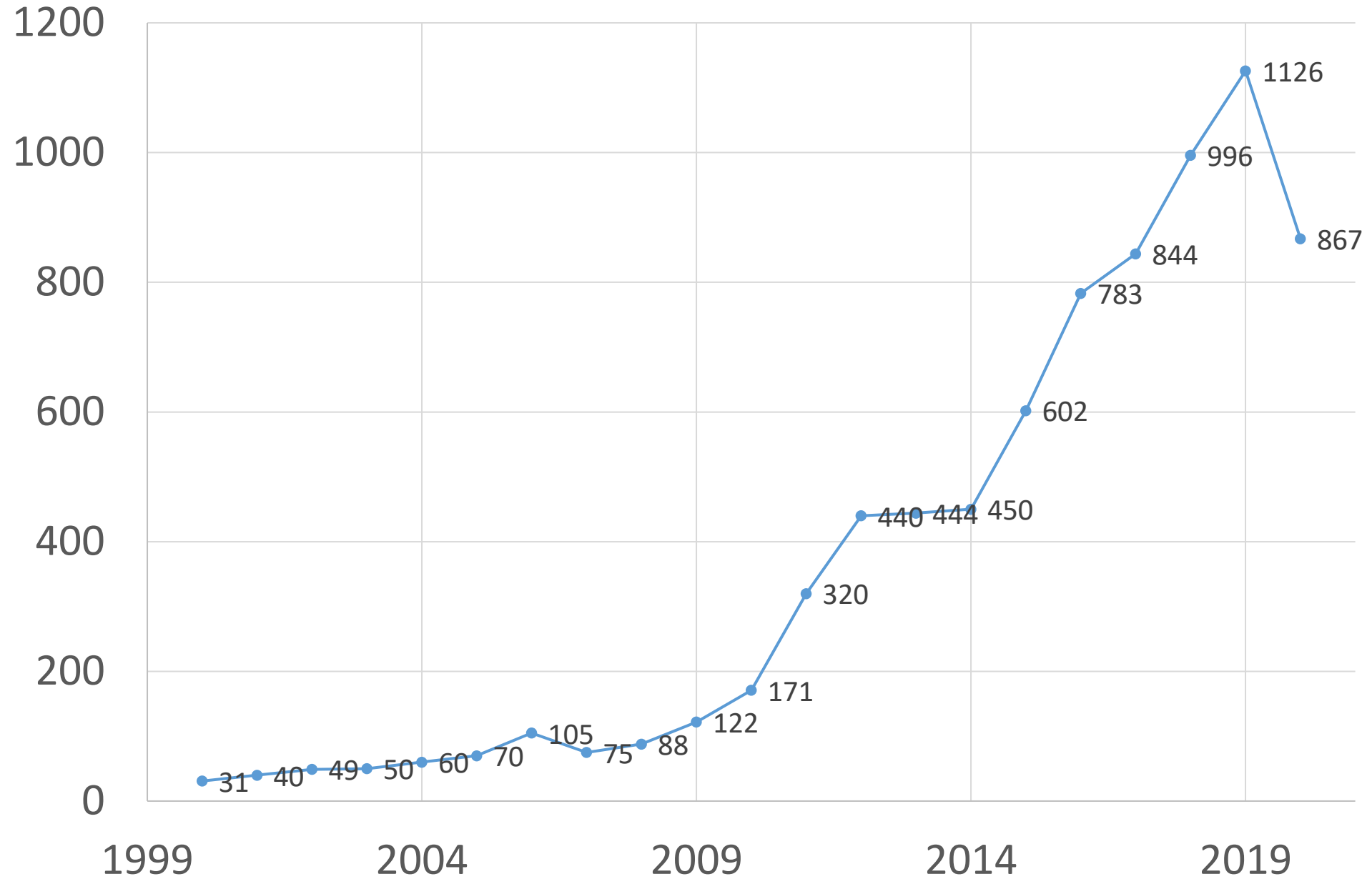
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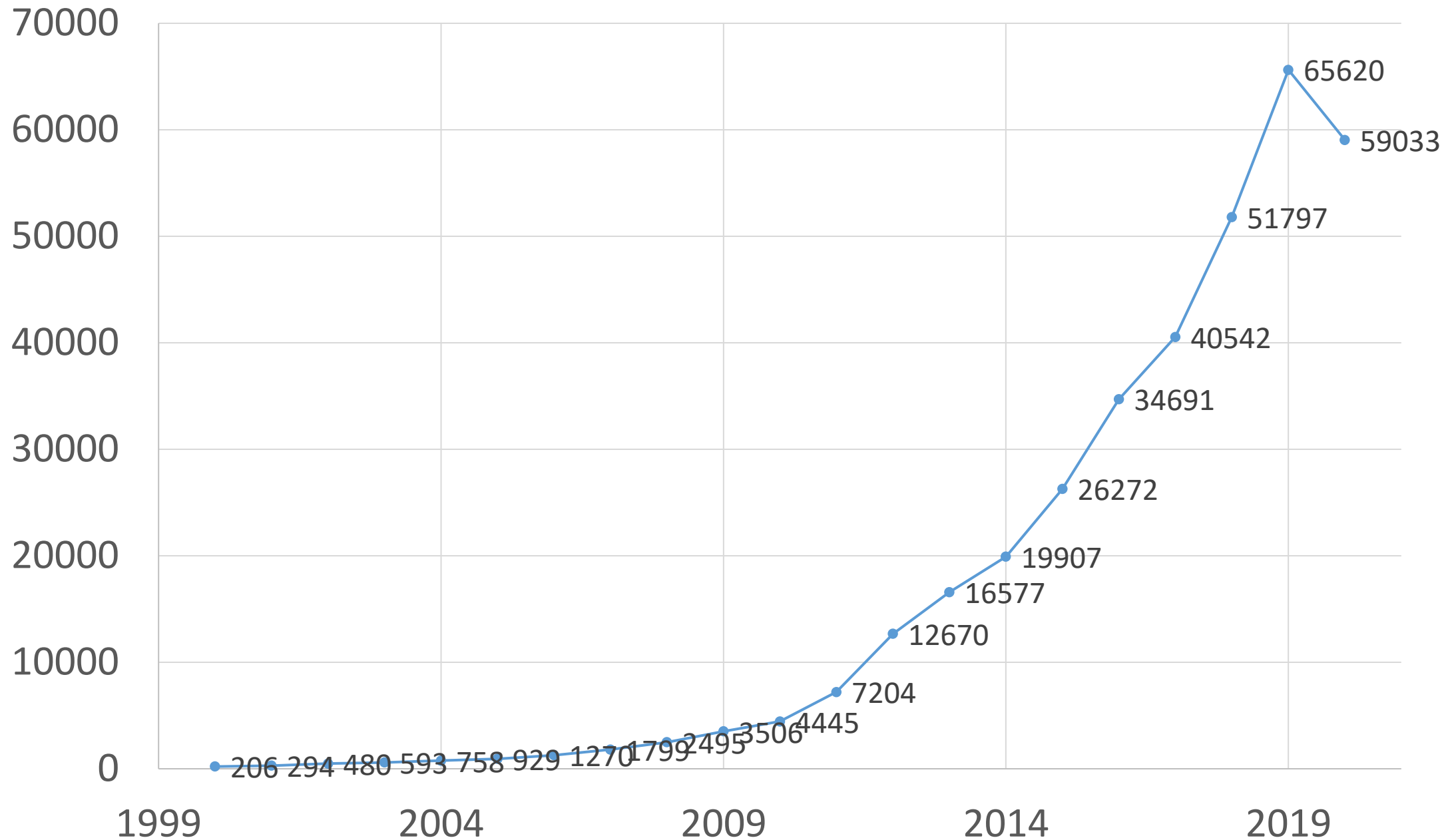
Data

- **Science Citation Index Expanded (SCI-EXPANDED)**
- **Social Sciences Citation Index (SSCI)**
- **Arts & Humanities Citation Index (A&HCI)**
- **7836 Publications**
- **351792 citations**

Joint publications Portugal-China, 2000-2020



Joint Publications PT-CN: Citations 2000-2020



1,791

PHYSICS PARTICLES FIELDS

550

MATERIALS SCIENCE MULTIDISCIPLINARY

361

ENGINEERING ELECTRIC
ELECTRONIC

320

PHYSICS APPLIED

535

PHYSICS NUCLEAR

314

CHEMISTRY MULTIDISCIPLINARY

251

PHYSICS
FLUIDS
PLASMAS

943

ASTRONOMY ASTROPHYSICS

405

PHYSICS MULTIDISCIPLINARY

302

CHEMISTRY PHYSICAL

TOP 20 Specialization Areas of Portuguese-Chinese Co-authorship

	WORLD		PT+CHINA		Specialization
	N	%	N	%	index
	col. 1	col. 2	col. 3	col. 4	col. 4 / col. 2
PHYSICS PARTICLES FIELDS	360165	0,918	1791	22,856	24,89760349
PHYSICS NUCLEAR	265229	0,676	535	6,827	10,09911243
ASTRONOMY ASTROPHYSICS	570959	1,455	943	12,034	8,270790378
PHYSICS FLUIDS PLASMAS	217956	0,555	251	3,203	5,771171171
PHYSICS MULTIDISCIPLINARY	677735	1,727	405	5,168	2,992472496
NUCLEAR SCIENCE TECHNOLOGY	308195	0,785	152	1,94	2,47133758
INSTRUMENTS INSTRUMENTATION	416936	1,063	201	2,565	2,412982126
TELECOMMUNICATIONS	355494	0,906	157	2,004	2,21192053
NANOSCIENCE NANOTECHNOLOGY	494897	1,261	205	2,616	2,074544013
ENGINEERING CIVIL	319261	0,814	125	1,595	1,959459459
COMPUTER SCIENCE INFORMATION SYSTEMS	336234	0,857	124	1,582	1,845974329
PHYSICS MATHEMATICAL	267149	0,681	85	1,085	1,593245228
CHEMISTRY INORGANIC NUCLEAR	401732	1,024	126	1,608	1,5703125
MATERIALS SCIENCE MULTIDISCIPLINARY	1902314	4,848	550	7,019	1,447813531
ENGINEERING ELECTRICAL ELECTRONIC	1321179	3,367	361	4,607	1,368280368
MATHEMATICS APPLIED	564021	1,437	151	1,927	1,34098817
COMPUTER SCIENCE ARTIFICIAL INTELLIGENCE	280888	0,716	73	0,932	1,301675978
COMPUTER SCIENCE INTERDISCIPLINARY APPLICATION	301689	0,769	77	0,983	1,278283485
ENGINEERING BIOMEDICAL	244946	0,624	59	0,753	1,206730769
ENGINEERING MECHANICAL	427878	1,09	99	1,263	1,158715596

Top 500 most cited publications (>120 up to 5908 cit.)

TOP 500	72 out of 500, Authors <10
144 Physics, Particles & Fields	14 Materials Science, Multidisciplinary
74 Astronomy & Astrophysics	8 Materials Science, Biomaterials
45 Physics, Nuclear	8 Engineering Biomedical
32 Physics, Multidisciplinary	5 Nanoscience, Nanotechnology
52 Medicine, General & Internal	3 Materials Science, Composites
14 Oncology	4 Chemistry, Multidisciplinary
10 Mycology	3 Astronomy & Astrophysics
12 Engineering, Biomedical	3 Physics, Particles & Fields
12 Materials Science, Biomaterials	3 Mechanics
12 Instruments & Instrumentation	

Final Remarks

- **Co-authored publications growing (CAGR 2000-2019 19,7%)**
- **Citations of co-authored publications growing (CAGR 2000-2019 33,4%)**
- **Very high citations / publications ratio (44,9)**
- **Multilateral cooperation**
- **Bilateral (or at least not too high n-lateral cooperation) concentrated in Materials + Nano Sciences-Nanotechnology**