Publication Report for scheduling Survey

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1 Introduction

This report is a companion document to the main report generated for the extracted information used in the survey of CP and Scheduling. This document is concerned with some of the summary statistics, and with data quality issues that nre highlighted for correction by the authors.

2 Data Quality

This section gives an overall overview of the works covered by the survey. We first look at all works, and consider which entries cannot be full analyzed. We consider the following status outcomes: no DOI, the bib entry does not give a DOI, this typically means that we cannot find the citation and reference counts for the work. A special case is the Thesis type, which typically do not have a DOI assigned by the university. Even entries with a DOI may not be covered, we distinguish entries that are covered by neither Crossref nor Scopus, or entries which are covered by one, but not the other. The OK status indicates that we can find the entry in all our sources.

Note that OpenCitations does not distinguish between a DOI that is not covered, and a DOI for which there are no references or citations. In both cases, an empty list is returned by the query.

We may be able to repair some of the entries by finding a DOI for entries which miss them, or by correcting a mistake in a DOI, where neither Crossref nor Scopus recognizes the entry. Note that the system responses are cached, and missing entries are not repeatedly queried by the system. This means that additions or corrections in the databases that occur after we first queried them for a specific entry are not automatically taken into account. It may be good practice to re-run all queries from time to time to reflect updates in the databases.

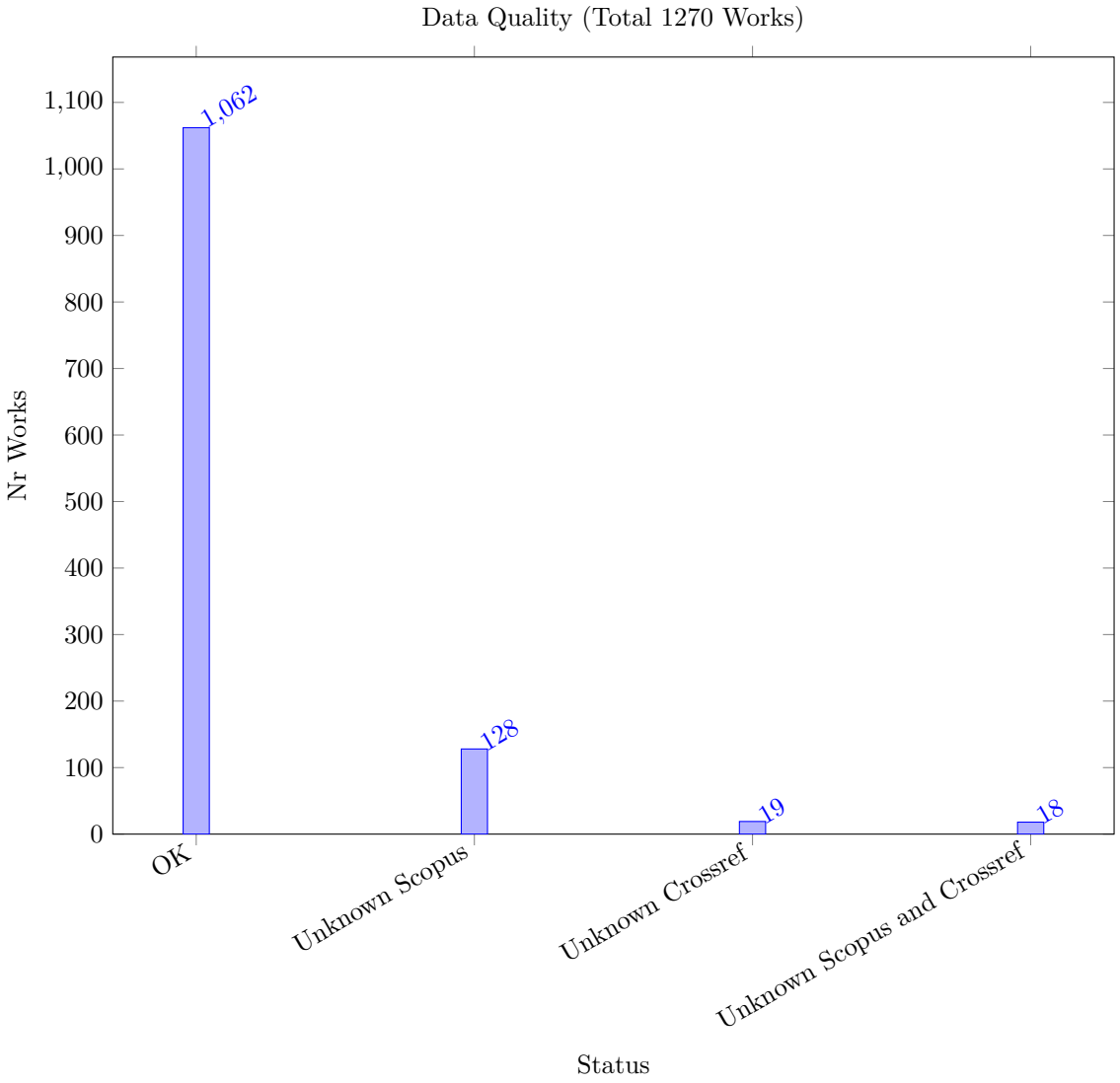

Data Quality (Total 1270 Works)
Nr Works
1,100
1,000
900
800
700
600
500
400
300
200
100
0
1,062
128
19
18
OK
Unknown Scopus
Unknown Crossref
Unknown Scopus and Crossref
Status

Table 1: Works Unknown to Crossref and Scopus

Key	DOI	Source Group	Year	Nr Citations	Crossref Citations	Scopus Citations	WoS Citations	Range Citations	Range Percentage
abs-2402-00459	10.48550/arxiv.2402.00459	Preprint	2024	0	0	0	null	0	NaN
Cloutier24	10.4230/lipics.cp.2024.7	CP	2024	0	0	0	null	0	NaN
Green24	10.4230/lipics.cp.2024.12	CP	2024	0	0	0	null	0	NaN
Le24	10.4230/lipics.cp.2024.18	CP	2024	0	0	0	null	0	NaN
Pucel24	10.4230/lipics.cp.2024.23	CP	2024	0	0	0	null	0	NaN
Verhaeghe24	10.4230/lipics.cp.2024.30	CP	2024	0	0	0	null	0	NaN
Cherif24	10.4230/lipics.cp.2024.34	CP	2024	0	0	0	null	0	NaN
abs-2305-19888	10.48550/arxiv.2305.19888	Preprint	2023	0	0	0	null	0	NaN
abs-2306-05747	10.48550/arxiv.2306.05747	Preprint	2023	0	0	0	null	0	NaN
abs-2312-13682	10.48550/arxiv.2312.13682	Preprint	2023	0	0	0	null	0	NaN
GokPTGO23	10.1007/s10479-022-04547-	ORJournal	2023	0	0	0	null	0	NaN
abs-2211-14492	10.48550/arxiv.2211.14492	Preprint	2022	0	0	0	null	0	NaN
OrnekOS20	10.1007/s12351-020-00563-	ORJournal	2022	0	0	0	null	0	NaN
OrnekO16	10.23055/ijietap.2016.23.1.1930	OtherJournal	2016	0	0	0	null	0	NaN
OddiRCS11	10.5591/978-1-57735-516-8/ijcai11-332	IJCAI	2011	0	0	0	null	0	NaN
AronssonBK09	10.4230/oasics.atmos.2009.2141	OtherConf	2009	0	0	0	null	0	NaN
KanetAG04	10.1201/9780203489802.ch47	Incoll	2004	0	0	0	null	0	NaN
BeckF98	10.1609/aimag.v19i4.1426	AIJournal	1998	0	0	0	null	0	NaN

Table 2: Works Unknown to Crossref

Key	DOI	Source Group	Year	Nr Citations	Crossref Citations	Scopus Citations	WoS Citations	Range Citations	Range Percentage
JuvinHHL23	10.4230/lipics.cp.2023.19	CP	2023	0	0	0	null	0	NaN
PovedaAA23	10.4230/lipics.cp.2023.31	CP	2023	0	0	0	null	0	NaN
AalianPG23	10.4230/lipics.cp.2023.6	CP	2023	0	0	0	null	0	NaN
KameugneFND23	10.4230/lipics.cp.2023.20	CP	2023	0	0	0	null	0	NaN
BoudreaultSLQ22	10.4230/lipics.cp.2022.10	CP	2022	0	0	0	null	0	NaN
PopovicCGNC22	10.4230/lipics.cp.2022.34	CP	2022	0	0	0	null	0	NaN
WinterMMW22	10.4230/lipics.cp.2022.41	CP	2022	0	0	0	null	0	NaN
ArmstrongGOS21	10.4230/lipics.cp.2021.16	CP	2021	1	0	1	null	1	100.00
AntuoriHHEN21	10.4230/lipics.cp.2021.14	CP	2021	0	0	1	null	1	100.00
KovacsTKSG21	10.4230/lipics.cp.2021.36	CP	2021	0	0	4	null	4	100.00
LacknerMMWW21	10.4230/lipics.cp.2021.37	CP	2021	0	0	3	null	3	100.00
WangB20	10.3233/faia200114	ECAI	2020	0	0	0	null	0	NaN
BarzegaranZP20	10.4230/oasics.fog-iot.2020.3	OtherConf	2020	0	0	0	null	0	NaN
BridiLBBM16	10.3233/978-1-61499-672-9-1598	ECAI	2016	0	0	0	null	0	NaN
BartakV15	10.5220/0005215701190130	OtherConf	2015	0	0	1	null	1	100.00
TranB12	10.3233/978-1-61499-098-7-774	ECAI	2012	0	0	30	null	30	100.00
PacinoH11	10.5591/978-1-57735-516-8/ijcai11-333	IJCAI	2011	0	0	0	null	0	NaN
OddiRC10	10.3233/978-1-60750-606-5-967	ECAI	2010	0	0	2	null	2	100.00
Hunsberger08	10.3233/978-1-58603-891-5-553	ECAI	2008	0	0	1	null	1	100.00

Table 3: Works Unknown to Scopus

Key	DOI	Source Group	Year	Nr Citations	Crossref Citations	Scopus Citations	WoS Citations	Range Citations	Range Percentage
Euler2024	10.1007/978-3-031-60597-0_17	CPAIOR	2024	0	0	0	null	0	NaN
Barral2024	10.1007/978-3-031-60597-0_3	CPAIOR	2024	0	0	0	null	0	NaN
Thomas2024	10.1007/978-3-031-60599-4_13	CPAIOR	2024	0	0	0	null	0	NaN
Houten2024	10.1007/978-3-031-60599-4_15	CPAIOR	2024	0	0	0	null	0	NaN
Infantes2024	10.1007/978-3-031-60597-0_21	CPAIOR	2024	0	0	0	null	0	NaN
Caballero23	10.1007/s10601-023-09357-0	Constraints	2023	0	0	0	null	0	NaN
NaderiBZ23	10.2139/ssrn.4494381	Preprint	2023	0	0	0	null	0	NaN
GunerGSKD23	10.1080/00207543.2023.2226772	OtherJournal	2023	0	3	0	null	3	100.00
IklassovMR023	10.24963/ijcai.2023/594	IJCAI	2023	0	0	0	null	0	NaN
Lyons2023	10.3390/analytics2030036	OtherJournal	2023	0	0	0	null	0	NaN
Bley2023	10.1007/978-3-031-24907-5_68	OtherConf	2023	0	0	0	null	0	NaN
Akan2023	10.33714/masteb.1324266	OtherJournal	2023	0	0	0	null	0	NaN
Abreu2023	10.1007/978-3-031-36121-0_9	OtherConf	2023	0	0	0	null	0	NaN
HebrardALLCMR22	10.24963/ijcai.2022/643	IJCAI	2022	0	0	0	null	0	NaN
NaderiBZ22	10.2139/ssrn.4140716	Preprint	2022	0	0	0	null	0	NaN
JuvinHL22	10.2139/ssrn.4068164	Preprint	2022	0	0	0	null	0	NaN
NaderiR22	10.1287/ijoo.2021.0056	ORJournal	2022	6	7	0	null	7	100.00
KotaryFH22	10.1609/aaai.v36i7.20685	AAAI	2022	0	2	0	null	2	100.00
Ouellet2022	10.1609/aaai.v36i4.20296	AAAI	2022	0	0	0	null	0	NaN
QinWSLS21	10.1109/tase.2019.2947398	OtherJournal	2021	16	19	0	null	19	100.00
GeibingerMM21	10.1609/aaai.v35i7.16789	AAAI	2021	1	1	0	null	1	100.00
KletzanderMH21	10.1609/aaai.v35i13.17408	AAAI	2021	2	2	0	null	2	100.00
Pinarbasi21	10.1080/0305215x.2021.1921171	OtherJournal	2021	5	6	0	null	6	100.00
Strak2021	10.5937/tehnika2102239s	OtherJournal	2021	0	0	0	null	0	NaN
Eiter2021	10.24963/kr.2021/27	OtherConf	2021	6	7	0	null	7	100.00
Rodler2021	10.24963/kr.2021/72	OtherConf	2021	1	1	0	null	1	100.00
GodetLHS20	10.1609/aaai.v34i02.5510	AAAI	2020	1	1	0	null	1	100.00
FallahiAC20	10.1504/ijams.2020.10026882	OtherJournal	2020	0	0	0	null	0	NaN
KletzanderM20	10.1609/icaps.v30i1.6688	ICAPS	2020	2	2	0	null	2	100.00
AbidinK20	10.1016/j.cor.2020.105069	ORJournal	2020	11	14	0	null	14	100.00
Danzinger2020	10.1609/icaps.v30i1.6681	ICAPS	2020	2	2	0	null	2	100.00
NishikawaSTT19	10.15803/ijnc.9.2_131	OtherJournal	2019	0	3	0	null	3	100.00
BlazewiczEP19	10.1007/978-3-319-99849-7	Incoll	2019	0	38	0	null	38	100.00
SenderovichBB19	10.1609/icaps.v29i1.3504	ICAPS	2019	0	2	0	null	2	100.00
PinarbasiAY19	10.1108/aa-12-2018-0262	OtherJournal	2019	0	18	0	null	18	100.00
AlakaPY19	10.1007/s00500-019-04294-8	OtherJournal	2019	0	0	0	null	0	NaN
PachecoPR19	10.24963/ijcai.2019/161	IJCAI	2019	0	1	0	null	1	100.00
BhatnagarKL19	10.24963/ijcai.2019/803	IJCAI	2019	0	1	0	null	1	100.00
RiahiNS018	10.1609/icaps.v28i1.13895	ICAPS	2018	0	4	0	null	4	100.00
AgussurjaKL18	10.1609/aaai.v32i1.12086	AAAI	2018	0	4	0	null	4	100.00
TranVNB17a	10.24963/ijcai.2017/726	IJCAI	2017	1	1	0	null	1	100.00
Laborie2017	10.1609/icaps.v27i1.13844	ICAPS	2017	2	2	0	null	2	100.00
Gonzlez2017	10.1609/icaps.v27i1.13809	ICAPS	2017	0	12	0	null	12	100.00
Bonfietti16	10.3233/ia-160095	AIJournal	2016	0	0	0	null	0	NaN
TranDRFWOVB16	10.1609/socs.v7i1.18390	OtherConf	2016	7	9	0	null	9	100.00
FrankDT16	10.1609/icaps.v26i1.13780	ICAPS	2016	4	5	0	null	5	100.00
KinsellaS0OS16	10.1609/aaai.v30i2.19079	AAAI	2016	1	2	0	null	2	100.00
Abdul-Niby2016	10.48084/etasr.627	OtherJournal	2016	4	4	0	null	4	100.00
Siala15	10.1007/s10601-015-9213-y	Constraints	2015	4	3	0	null	4	100.00
Kameugne15	10.1007/s10601-015-9227-5	Constraints	2015	0	0	0	null	0	NaN
LimBTBB15a	10.1609/aaai.v29i1.9236	AAAI	2015	3	3	0	null	3	100.00

Key	DOI	Source Group	Year	Nr Citations	Crossref Citations	Scopus Citations	WoS Citations	Range Citations	Range Percentage
Oliveira2015	10.14807/ijmp.v6i1.262	OtherJournal	2015	2	1	0	null	2	100.00
Bzdyra2015	10.4028/www.scientific.net/amm.791.70	OtherJournal	2015	5	5	0	null	5	100.00
FriedrichFMRSST14	10.1007/978-3-319-28697-6_23	OtherConf	2014	3	3	0	null	3	100.00
LipovetzkyBPS14	10.1609/icaps.v24i1.13666	ICAPS	2014	5	5	0	null	5	100.00
LudwigKRBMS14	10.1609/aaai.v28i2.19030	AAAI	2014	1	1	0	null	1	100.00
ChunS14	10.1609/aaai.v28i2.19013	AAAI	2014	3	3	0	null	3	100.00
Silva2014	10.1590/2238-1031.jtl.v8n4a9	OtherJournal	2014	2	2	0	null	2	100.00
Levine2014	10.1609/icaps.v24i1.13672	ICAPS	2014	18	20	0	null	20	100.00
Lozano2014	10.1145/2666357.2597815	OtherJournal	2014	3	2	0	null	3	100.00
Banaszak2014	10.1515/fman-2015-0014	OtherJournal	2014	8	8	0	null	8	100.00
BonfiettiLM13	10.1609/icaps.v23i1.13608	ICAPS	2013	1	1	0	null	1	100.00
LombardiM13	10.1609/icaps.v23i1.13580	ICAPS	2013	3	0	0	null	3	100.00
TranTDB13	10.1609/icaps.v23i1.13552	ICAPS	2013	2	2	0	null	2	100.00
MalapertCGJLR13	10.1609/icaps.v23i1.13575	ICAPS	2013	0	0	0	null	0	NaN
Zoulfaghari2013	10.4018/jaec.2013040103	OtherJournal	2013	5	5	0	null	5	100.00
Guimarans2013	10.4018/978-1-4666-2461-0.ch007	Inbook	2013	1	1	0	null	1	100.00
Janosikova2013	10.26552/com.c.2013.1.39-43	OtherJournal	2013	0	0	0	null	0	NaN
Kelareva2012	10.1609/icaps.v22i1.13494	ICAPS	2012	0	14	0	null	14	100.00
BajestaniB11	10.1609/icaps.v21i1.13450	ICAPS	2011	0	2	0	null	2	100.00
Milano11	10.1002/9780470400531.eorms0473	Inbook	2011	0	0	0	null	0	NaN
Lizarralde2011	10.3917/proj.007.0089	OtherJournal	2011	0	1	0	null	1	100.00
Laborie2011	10.1007/978-3-642-23592-4_6	Inbook	2011	0	2	0	null	2	100.00
Baptiste09	10.1007/978-3-642-04244-7_1	CP	2009	0	0	0	null	0	NaN
MonetteDH09	10.1609/icaps.v19i1.13356	ICAPS	2009	9	10	0	null	10	100.00
Lorterapong2009	10.4203/ccp.74.8	OtherConf	2009	2	2	0	null	2	100.00
MercierH08	10.1287/ijoc.1070.0226	InformsJC	2008	32	33	0	null	33	100.00
AggounMV08	10.1007/978-0-387-74759-0_396	Inbook	2008	0	0	0	null	0	NaN
Terashima-Marn2008a	10.1007/978-3-540-88636-5_39	OtherConf	2008	5	5	0	null	5	100.00
Banaszak2008	10.7494/dmms.2008.2.2.5	OtherJournal	2008	4	4	0	null	4	100.00
Limtanyakul07	10.1007/978-3-540-77903-2_65	OtherConf	2007	2	2	0	null	2	100.00
2007	10.1007/978-3-540-32220-7_13	Inbook	2007	0	0	0	null	0	NaN
NeronABCDD06	10.1007/978-0-387-33768-5_7	Inbook	2006	3	3	0	null	3	100.00
RussellU06	10.1016/j.cor.2004.09.029	ORJournal	2006	22	22	0	null	22	100.00
Trilling2006	10.3182/20060517-3-fr-2903.00340	OtherJournal	2006	25	25	0	null	25	100.00
OddiPCC05	10.1007/0-387-27744-7_7	OtherConf	2005	0	3	0	null	3	100.00
Bartak2005	10.4018/978-1-59140-450-7.ch010	Inbook	2005	0	3	0	null	3	100.00
Vazacopoulos2005	10.1007/0-387-26281-4_12	Inbook	2005	0	3	0	null	3	100.00
Zhang2005	10.1109/icmlc.2004.1380769	OtherConf	2005	0	0	0	null	0	NaN
DannaP04	10.1007/978-1-4419-8917-8_2	Inbook	2004	0	2	0	null	2	100.00
AjiliW04	10.1007/978-1-4419-8917-8_6	Inbook	2004	0	4	0	null	4	100.00
AggounV04	10.1007/978-3-540-24734-0_15	Inbook	2004	0	7	0	null	7	100.00
HenzMT04	10.1016/s0377-2217(03)00101-2	EJOR	2004	0	47	0	null	47	100.00
Tsang03	10.1023/a:1024016929283	OtherJournal	2003	1	0	0	null	1	100.00
DomdorfPH03	10.1007/978-3-642-18965-4_31	Inbook	2003	0	0	0	null	0	NaN
Apt03	10.1017/cbo9780511615320	Background	2003	0	374	0	null	374	100.00
Sadykov2003	10.2139/ssrn.988640	Preprint	2003	0	3	0	null	3	100.00
Timpe2003	10.1007/978-3-662-05607-3_5	Inbook	2003	0	2	0	null	2	100.00
ElkhyariGJ02	10.1007/3-540-46135-3_49	CP	2002	0	1	0	null	1	100.00
ZhuS02	10.1007/3-540-47961-9_69	OtherConf	2002	0	0	0	null	0	NaN
MilanoORT02	10.1287/ijoc.14.4.387.2830	InformsJC	2002	0	14	0	null	14	100.00
Hooker02	10.1287/ijoc.14.4.295.2828	InformsJC	2002	0	93	0	null	93	100.00
Hentenryck02	10.1287/ijoc.14.4.345.2826	Background	2002	0	50	0	null	50	100.00
EastonNT02	10.1007/978-3-540-45157-0_6	OtherConf	2002	0	50	0	null	50	100.00

Key	DOI	Source Group	Year	Nr Citations	Crossref Citations	Scopus Citations	WoS Citations	Range Citations	Range Percentage
Varnier2002	10.1109/icsmc.1996.561432	OtherConf	2002	0	0	0	null	0	NaN
Richard2002	10.1109/etfa.1995.496763	OtherConf	2002	4	4	0	null	4	100.00
Petith2002	10.1109/etfa.1995.496657	OtherConf	2002	0	0	0	null	0	NaN
BaptistePN01	10.1007/978-1-4615-1479-4	Book	2001	0	302	0	null	302	100.00
BosiM2001	10.1002/1097-024x(200101)31:1<17::aid-spe355>3.0.co;2-l	OtherJournal	2001	0	3	0	null	3	100.00
Henz01	10.1287/opre.49.1.163.11193	ORJournal	2001	0	68	0	null	68	100.00
Rgin2001	10.1090/dimacs/057/07	Inbook	2001	0	29	0	null	29	100.00
Baptiste2001	10.1007/978-1-4615-1479-4_2	Inbook	2001	0	1	0	null	1	100.00
LopezAKYG00	10.1016/s0947-3580(00)71114-9	OtherJournal	2000	0	0	0	null	0	NaN
Hooker00	10.1002/9781118033036	Book	2000	0	186	0	null	186	100.00
Simonis99	10.1007/3-540-45406-3_6	OtherConf	1999	0	5	0	null	5	100.00
DorndorfPH99	10.1007/978-3-642-58409-1_35	OtherConf	1999	0	0	0	null	0	NaN
DorndorfHP99	10.1007/978-1-4615-5533-9_10	Inbook	1999	0	18	0	null	18	100.00
CarlssonKA99	10.1007/3-540-49201-1_23	OtherConf	1999	0	1	0	null	1	100.00
PembertonG98	10.1090/dimacs/057/06	OtherConf	1998	0	0	0	null	0	NaN
MarriottS98	10.7551/mitpress/5625.001.0001	Background	1998	0	423	0	null	423	100.00
BeckDDF98	10.1002/(sici)1099-1425(199808)1:2<89::aid-jos9>3.0.co;2-h	OtherJournal	1998	0	8	0	null	8	100.00
Jaffar1998	10.1093/oso/9780198537922.003.0012	Inbook	1998	0	3	0	null	3	100.00
Mesghouni1997	10.1007/978-0-387-35086-8_12	Inbook	1997	0	2	0	null	2	100.00
Simonis95a	10.1007/3-540-60794-3_11	OtherConf	1995	0	1	0	null	1	100.00
Schiex1994	10.1142/s0218213094000108	OtherJournal	1994	0	66	0	null	66	100.00
Freuder1994	10.7551/mitpress/2122.001.0001	Book	1994	0	22	0	null	22	100.00
Icmeli1993	10.1108/01443579310046454	OtherJournal	1993	0	99	0	null	99	100.00
Barber1993	10.1145/152947.152955	OtherJournal	1993	0	13	0	null	13	100.00
BaptisteLV92	10.1109/robot.1992.220195	OtherConf	1992	0	11	0	null	11	100.00
Demeulemeester1992	10.1287/mnsc.38.12.1803	ORJournal	1992	0	387	0	null	387	100.00
Elmaghraby1992	10.1287/mnsc.38.9.1245	ORJournal	1992	0	121	0	null	121	100.00
CarlierP90	10.1007/bf03543071	Background	1990	0	114	0	null	114	100.00
CarlierP89	10.1287/mnsc.35.2.164	Background	1989	0	524	0	null	524	100.00
PritskerWW69	10.1287/mnsc.16.1.93	Background	1969	513	518	0	null	518	100.00

2.1 Range of Citation Counts

We get citation counts for the works included in the survey from different sources. OpenCitations provides the set of papers citing a reference, but only if both have DOIs. Crossref gives a count of how many papers cite a reference, they include some papers without DOI. Scopus gives a citation count, but does not give access to the actual citations. In this table we show the works with the largest range of citation count, excluding all background works. A typical issue is that one source does not cover the work, and has a zero count. An alternative is where papers with many citations give a slightly different count depending on which links are included in their database.

The results seem to indicate the using multiple sources is required, to avoid leaving out works that are not covered by one specific source. Note that the WoS numbers are only present for a few works, we show them, but do not include them in computing range.

Table 4: Works with largest Range of Citation Counts

Key	DOI	Source Group	Year	Nr Citations	Crossref Citations	Scopus Citations	WoS Citations	Range Citations	Range Percentage
JainM99	10.1016/s0377-2217(98)00113-1	EJOR	1999	0	503	630	null	630	100.00
MintonJPL92	10.1016/0004-3702(92)90007-k	AIJournal	1992	0	440	525	null	525	100.00
Fisher1985	10.1287/inte.15.2.10	OtherJournal	1985	0	473	517	null	517	100.00
BlazewiczDP96	10.1016/0377-2217(95)00362-2	EJOR	1996	0	357	412	null	412	100.00
Demeulemeester1992	10.1287/mnsc.38.12.1803	ORJournal	1992	0	387	0	null	387	100.00
Davis87	10.1016/0004-3702(87)90091-9	AIJournal	1987	0	312	332	null	332	100.00
JainG01	10.1287/ijoc.13.4.258.9733	InformsJC	2001	0	284	321	null	321	100.00
BaptistePN01	10.1007/978-1-4615-1479-4	Book	2001	0	302	0	null	302	100.00
BeldiceanuC94	10.1016/0895-7177(94)90127-9	OtherJournal	1994	0	169	223	null	223	100.00
KendallKRU10	10.1016/j.cor.2009.05.013	ORJournal	2010	0	186	220	161	220	100.00
AggounB93	10.1016/0895-7177(93)90068-a	OtherJournal	1993	0	191	214	null	214	100.00
LaborieRSV18	10.1007/s10601-018-9281-x	Constraints	2018	0	178	203	null	203	100.00
Ham18	10.1016/j.trc.2018.03.025	OtherJournal	2018	0	192	197	null	197	100.00
HarjunkoskiG02	10.1016/s0098-1354(02)00100-x	OtherJournal	2002	0	173	192	null	192	100.00
Hooker00	10.1002/9781118033036	Book	2000	0	186	0	null	186	100.00
Demeulemeester1997	10.1287/mnsc.43.11.1485	ORJournal	1997	0	161	183	null	183	100.00
Moccia2005	10.1002/nav.20121	OtherJournal	2005	0	147	168	null	168	100.00
Talbot1978	10.1287/mnsc.24.11.1163	ORJournal	1978	0	152	155	null	155	100.00
BensanaLV99	10.1023/a:1026488509554	Constraints	1999	0	0	150	null	150	100.00
Wallace96	10.1007/bf00143881	Constraints	1996	0	89	138	null	138	100.00
SadehF96	10.1016/0004-3702(95)00098-4	AIJournal	1996	0	97	131	null	131	100.00
MaraveliasCG04	10.1016/j.compchemeng.2004.03.016	OtherJournal	2004	0	119	130	null	130	100.00
Younes2003	10.1613/jair.1136	OtherJournal	2003	0	55	128	null	128	100.00
Lim2004	10.1002/nav.10123	OtherJournal	2004	0	103	121	null	121	100.00
Elmaghraby1992	10.1287/mnsc.38.9.1245	ORJournal	1992	0	121	0	null	121	100.00
Kuchcinski03	10.1145/785411.785416	OtherJournal	2003	0	105	116	null	116	100.00
HookerO99	10.1016/s0166-218x(99)00100-6	OtherJournal	1999	0	95	111	null	111	100.00
JussienL02	10.1016/s0004-3702(02)00221-7	AIJournal	2002	0	88	108	null	108	100.00
SakkoutW00	10.1023/a:1009856210543	Constraints	2000	0	0	105	null	105	100.00
Pape94	10.1049/ise.1994.0009	OtherJournal	1994	0	98	103	null	103	100.00
Deblaere2011	10.1016/j.cor.2010.01.001	ORJournal	2011	0	85	103	null	103	100.00
Coelho2011	10.1016/j.ejor.2011.03.019	EJOR	2011	0	89	102	null	102	100.00
DincbasSH90	10.1016/0743-1066(90)90052-7	OtherJournal	1990	0	85	99	null	99	100.00
Icmeli1993	10.1108/01443579310046454	OtherJournal	1993	0	99	0	null	99	100.00
Thorsteinsson01	10.1007/3-540-45578-7_2	CP	2001	0	68	97	null	97	100.00
KhayatLR06	10.1016/j.ejor.2005.02.077	EJOR	2006	0	89	96	null	96	100.00
Hooker02	10.1287/ijoc.14.4.295.2828	InformsJC	2002	0	93	0	null	93	100.00
Smith-Miles2009	10.1145/1456650.1456656	OtherJournal	2009	302	307	395	null	93	23.54
Clearwater1991	10.1126/science.254.5035.1181	OtherJournal	1991	0	91	93	null	93	100.00
Gent1996	10.1007/3-540-61551-2_74	CP	1996	0	56	93	null	93	100.00
BockmayrK98	10.1287/ijoc.10.3.287	InformsJC	1998	0	79	92	null	92	100.00
NuijtenA96	10.1016/0377-2217(95)00354-1	EJOR	1996	0	65	90	null	90	100.00
Hooker05	10.1007/s10601-005-2812-2	Constraints	2005	0	69	87	null	87	100.00
Dorndorf2000a	10.1287/mnsc.46.10.1365.12272	ORJournal	2000	0	80	87	null	87	100.00
Michel2012	10.1007/978-3-642-29828-8_15	CPAIOR	2012	0	48	87	null	87	100.00
ArtiguesR00	10.1016/s0377-2217(99)00496-8	EJOR	2000	0	85	86	null	86	100.00
Chan2002	10.1061/(asce)0733-9364(2002)128:6(513)	OtherJournal	2002	0	69	86	null	86	100.00
BaptistePN99	10.1023/a:1018995000688	ORJournal	1999	0	0	85	null	85	100.00
BukchinR18	10.1016/j.omega.2017.06.008	OtherJournal	2018	0	68	81	null	81	100.00
GombolayWS18	10.1109/tro.2018.2795034	OtherJournal	2018	0	80	79	null	80	100.00

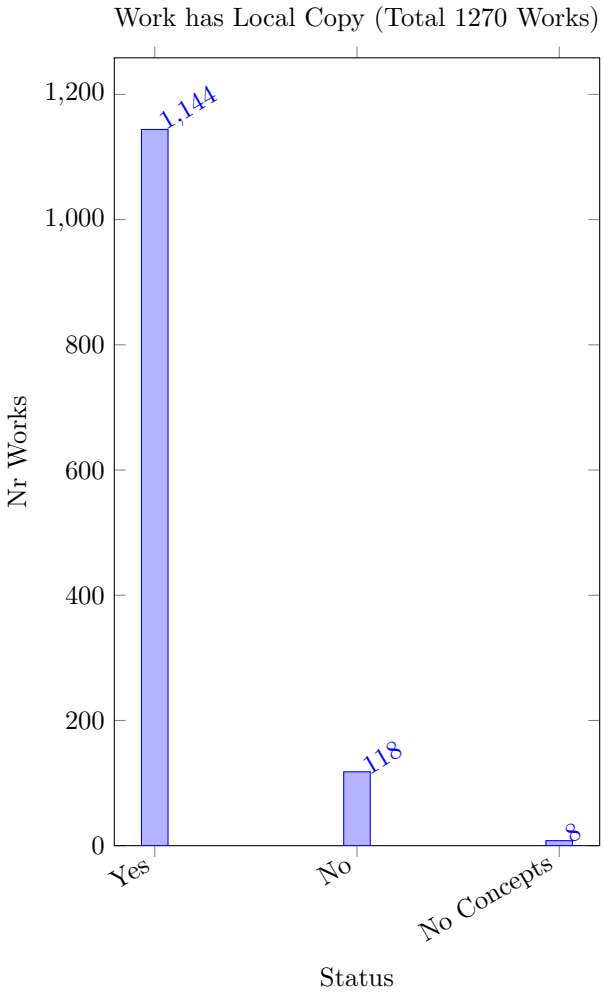
We only have Web of Science data in a few bibtex entries, we here try to evaluate their citation numbers on those bib entries which are from WoS.

Table 5: Works with WoS Citation Counts

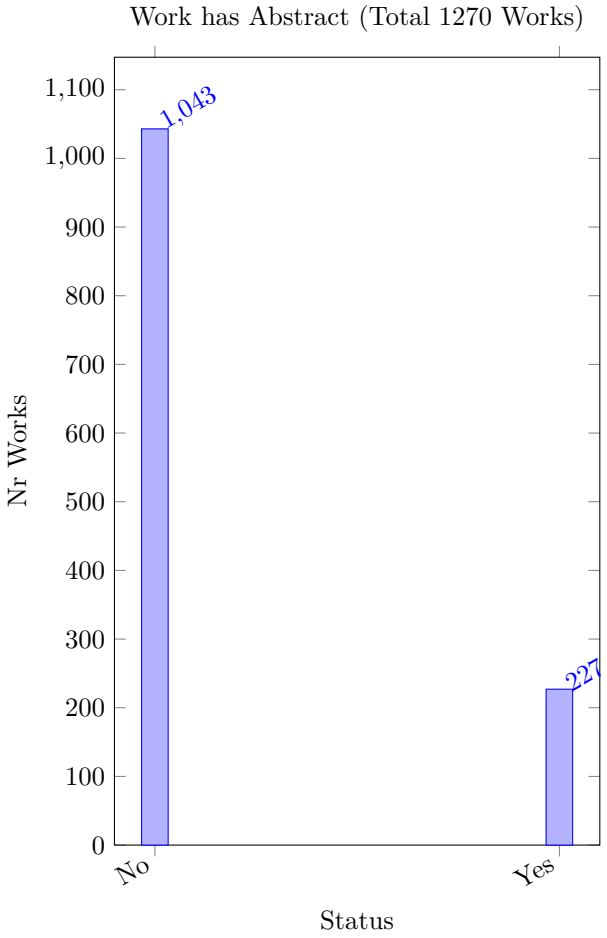
Key	DOI	Source Group	Year	Nr Citations	Crossref Citations	Scopus Citations	WoS Citations	Range Citations	Range Percentage
KendallKRU10	10.1016/j.cor.2009.05.013	ORJournal	2010	0	186	220	161	220	100.00
MeskensDL13	10.1016/j.dss.2012.10.019	OtherJournal	2013	103	102	116	103	14	12.07
RasmussenT07	10.1016/j.ejor.2005.10.063	EJOR	2007	60	62	71	53	11	15.49
Ribeiro12	10.1111/j.1475-3995.2011.00819.x	OtherJournal	2012	0	52	54	41	54	100.00
ElfJR03	10.1016/s0167-6377(03)00025-7	OtherJournal	2003	0	41	45	34	45	100.00
Trick03	10.1007/978-3-540-45157-0_4	OtherConf	2003	0	24	39	34	39	100.00
RasmussenT06	10.1007/11757375_15	CPAIOR	2006	10	12	19	11	9	47.37
FelizariAL09	10.1016/s1570-7946(05)80013-6	OtherConf	2009	7	7	12	1	5	41.67
MagataoAN05	10.1016/s1570-7946(05)80013-6	OtherConf	2005	0	7	12	12	12	100.00
RasmussenT09	10.1007/s10479-008-0384-4	ORJournal	2009	9	9	9	8	0	0.00
Trick11	10.1007/978-1-4419-1644-0_15	Incoll	2011	0	2	5	5	5	100.00
LiuLH19a	10.5220/0007252300290039	OtherConf	2019	0	3	4	4	4	100.00
SuCC13	10.1016/j.cie.2013.02.021	OtherJournal	2013	2	2	4	1	2	50.00
ZengM12	10.1016/j.cor.2011.10.004	ORJournal	2012	0	3	4	3	4	100.00
GhandehariK22	10.1016/j.apm.2022.01.001	OtherJournal	2022	0	4	4	3	4	100.00
BulckG22	10.1007/s10951-021-00717-3	OtherJournal	2022	0	3	3	3	3	100.00
Perron05	10.1007/11564751_67	CP	2005	0	1	2	1	2	100.00
LiuLH18	10.1007/978-3-030-05918-7_7	OtherConf	2018	0	2	1	1	2	100.00
MeskensDHG11	n/a	OtherConf	2011	0	0	0	null	0	NaN
NaqviAIAAA22	10.32604/cmc.2022.019653	OtherJournal	2022	0	0	0	0	0	NaN
KonowalenkoMM19	10.1109/tla.2019.8932340	OtherJournal	2019	0	0	0	0	0	NaN

2.2 Local Copies

The tool relies on local pdf copies of works to perform a detailed analysis of the content of the work. We have collected our own private copies of works for that purpose. The following plot shows how many entries do not have a local copy, or which do not extract any concepts from the local copy. A detailed list of all missing entries is given in the main report. Note that in some cases we use an open access version of the work, which might differ slightly from the published version.


Work has Local Copy (Total 1270 Works)
1,200
1,000
800
600
400
200
0
Nr Works
1,144
118
8
Yes
No
No Concepts
Status

2.3 Presence of Abstracts



2.4 Orphan Files

The following list shows entries for which we have a pdf file in the works directory, but the name of hte file does not match any key in the bibliography. These orphans should be resolved, either by correcting the name, or adding a bib entry for the work, or by removing the file, if it is not required.

If there are no files listed, then all pdf files in the works directory correspond to a bib entry, and no clean-up is required.

Table 6: Orphan Files

Key	File

2.5 Missing Publisher

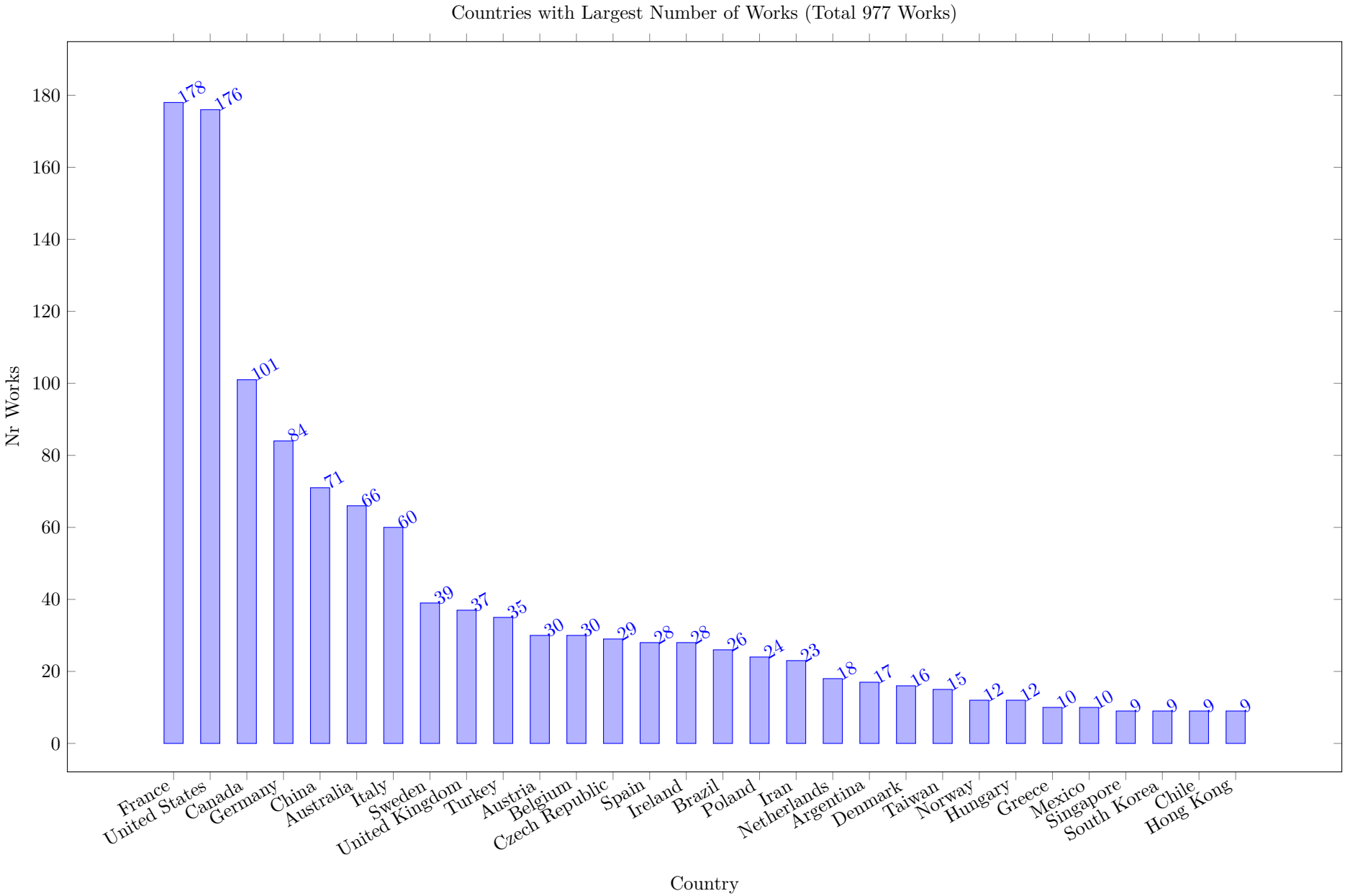
Table 7: Missing Publisher

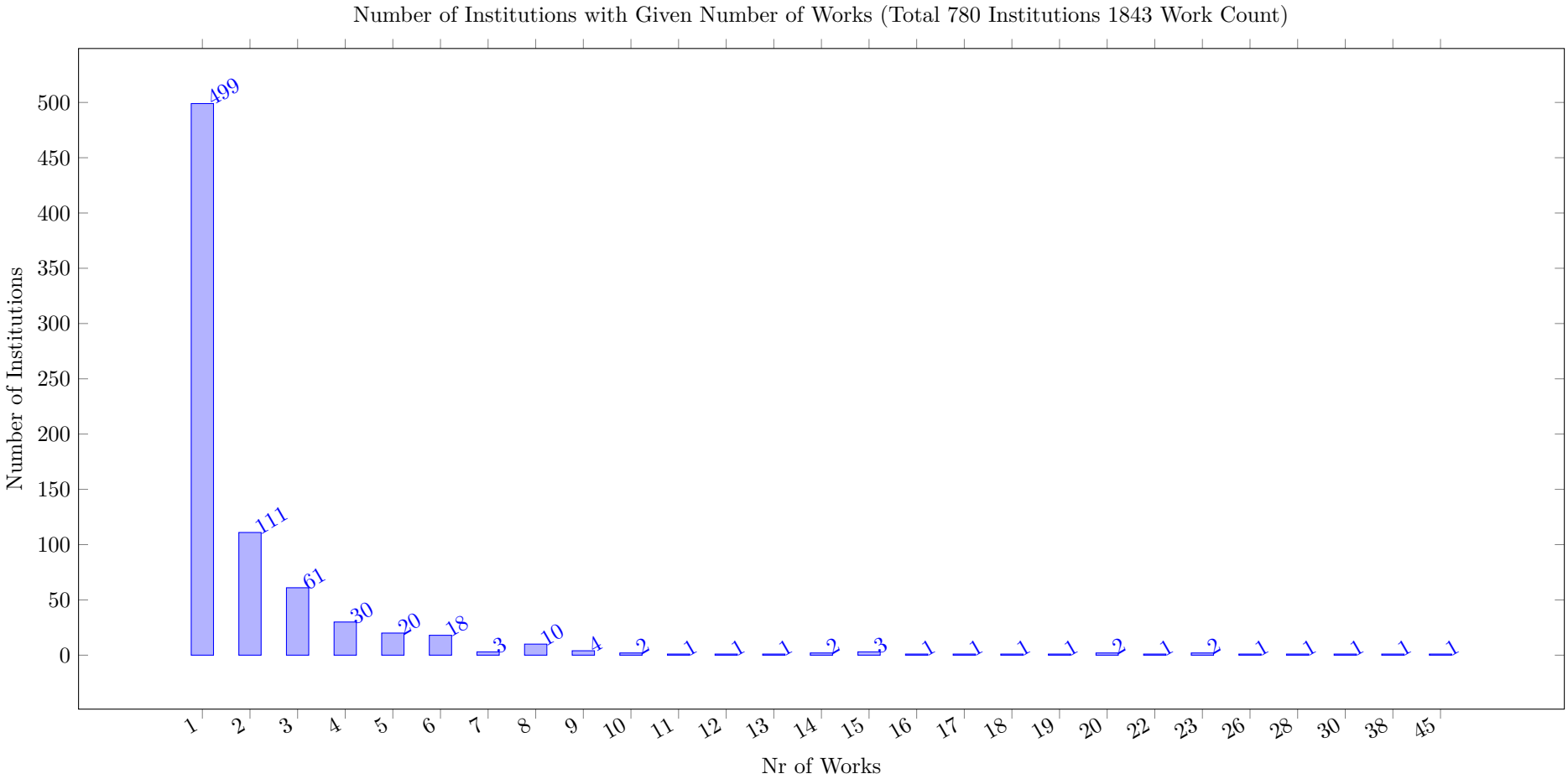
Key	DOI	Source Group	Year	Nr Citations	Crossref Citations	Scopus Citations	WoS Citations	Range Citations	Range Percentage

3 Works by Location

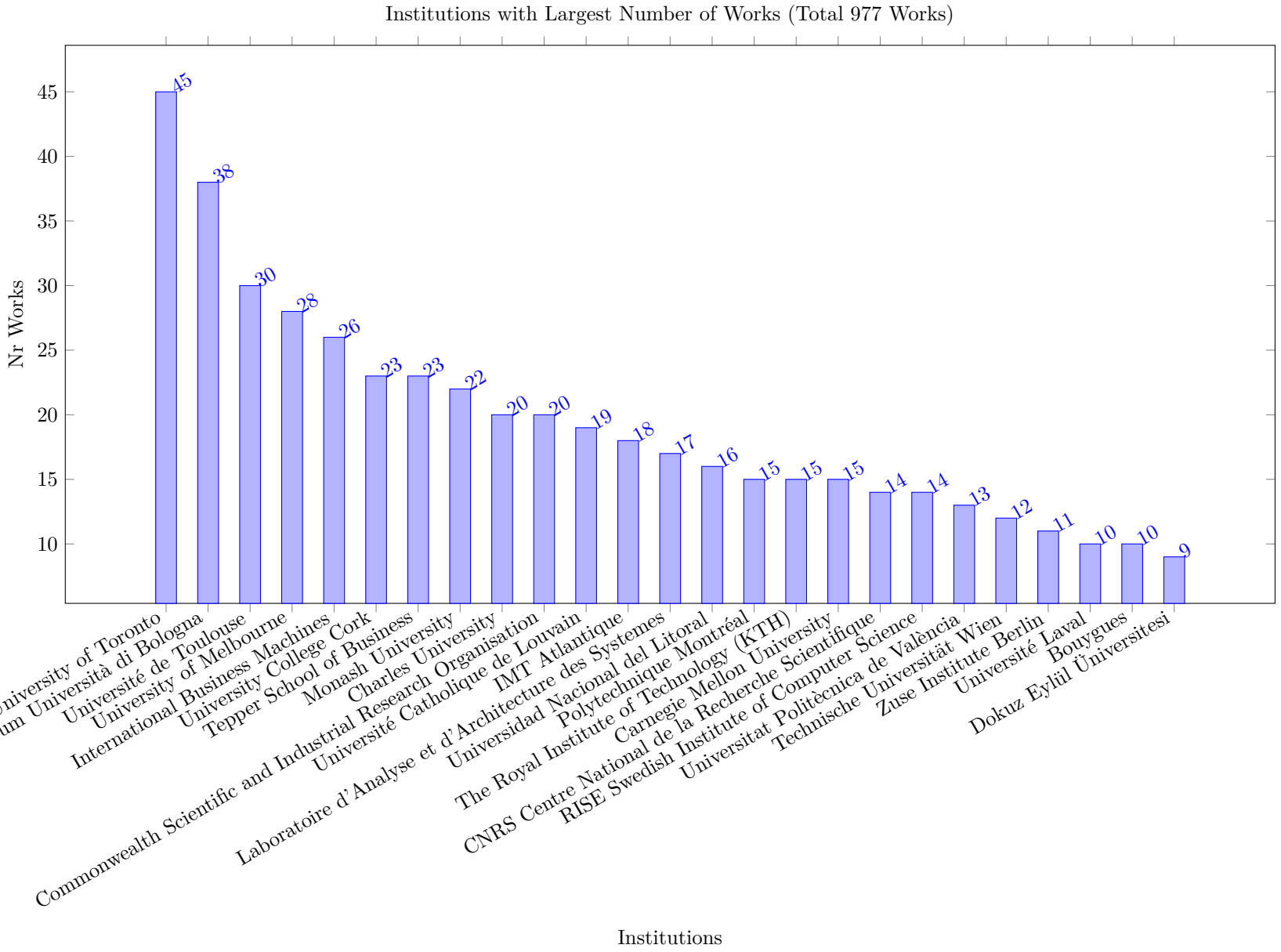
This section analyzes papers by affiliation, which is given by the Scopus data only. Only works which are covered by Scopus are included. We first present the number of papers by country. A paper is counted in this analysis (once), if at least one of the affiliations is from the country. Multiple affiliations from the same country only count once. The 30 countries with the largest counts are shown.

Note that one work will be counted for multiple countries, if the affiliations are from different countries. So the sum of the bar heights typically exceeds the total number of works considered.


Countries with Largest Number of Works (Total 977 Works)
Nr Works
0
20
40
60
80
100
120
140
160
180
178
176
101
84
71
66
60
39
37
35
30
30
29
28
28
26
24
23
18
17
16
15
12
12
10
10
9
9
9
9
France
United States
Canada
Germany
China
Australia
Italy
Sweden
United Kingdom
Turkey
Austria
Belgium
Czech Republic
Spain
Ireland
Brazil
Poland
Iran
Netherlands
Argentina
Denmark
Taiwan
Norway
Hungary
Greece
Mexico
Singapore
South Korea
Chile
Hong Kong
Country

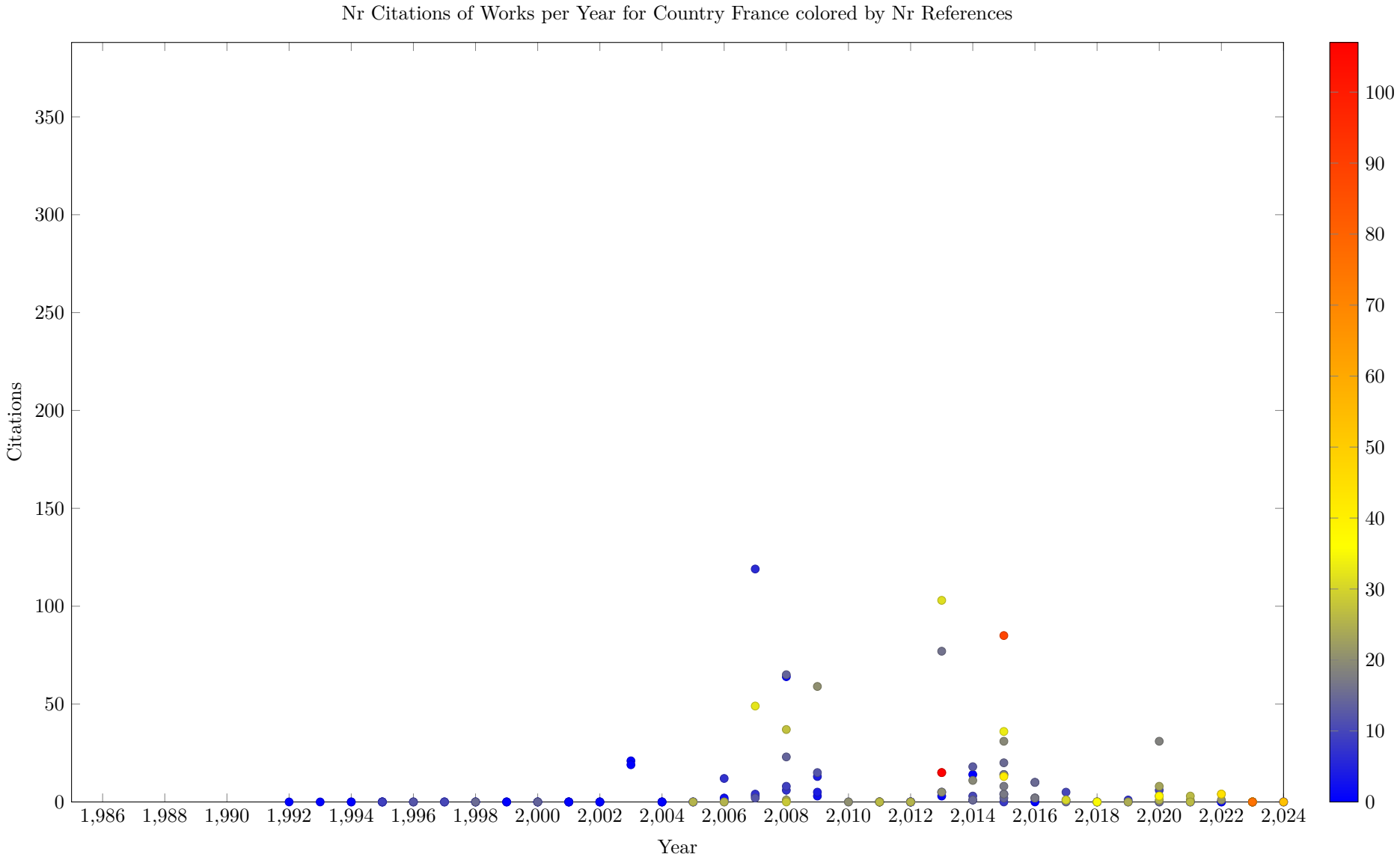


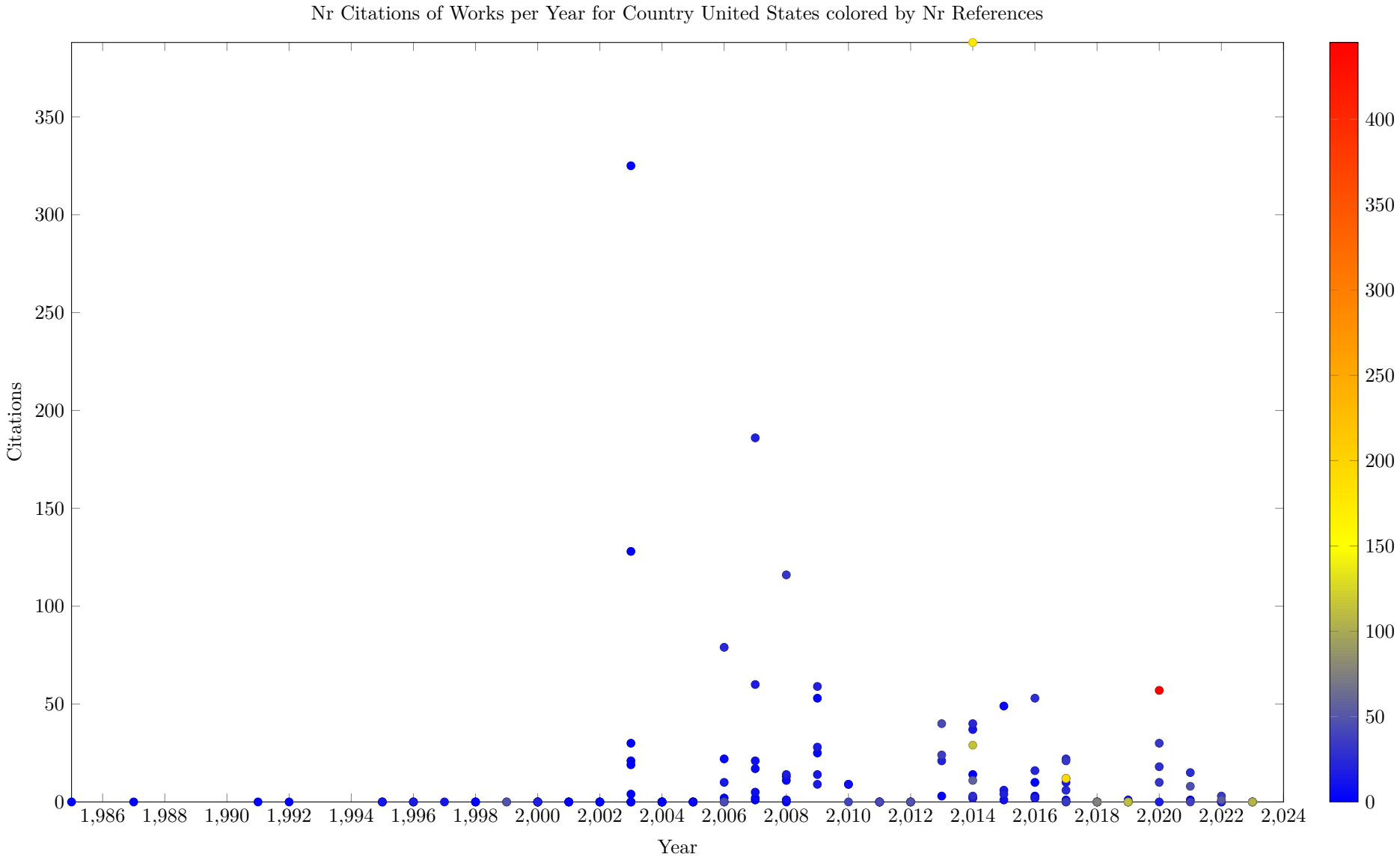
The next plot shows the number of papers associated to institutions, as stated in the Scopus affiliation. A work is counted, if at least one of the affiliations is from a given institution. Due to the format of the Scopus data, we cannot fractionally assign a paper based on the author affiliations, each paper is counted one for every institution for which an affiliation is given. If some author has multiple affiliations listed, we (mis)count the work for each of them.

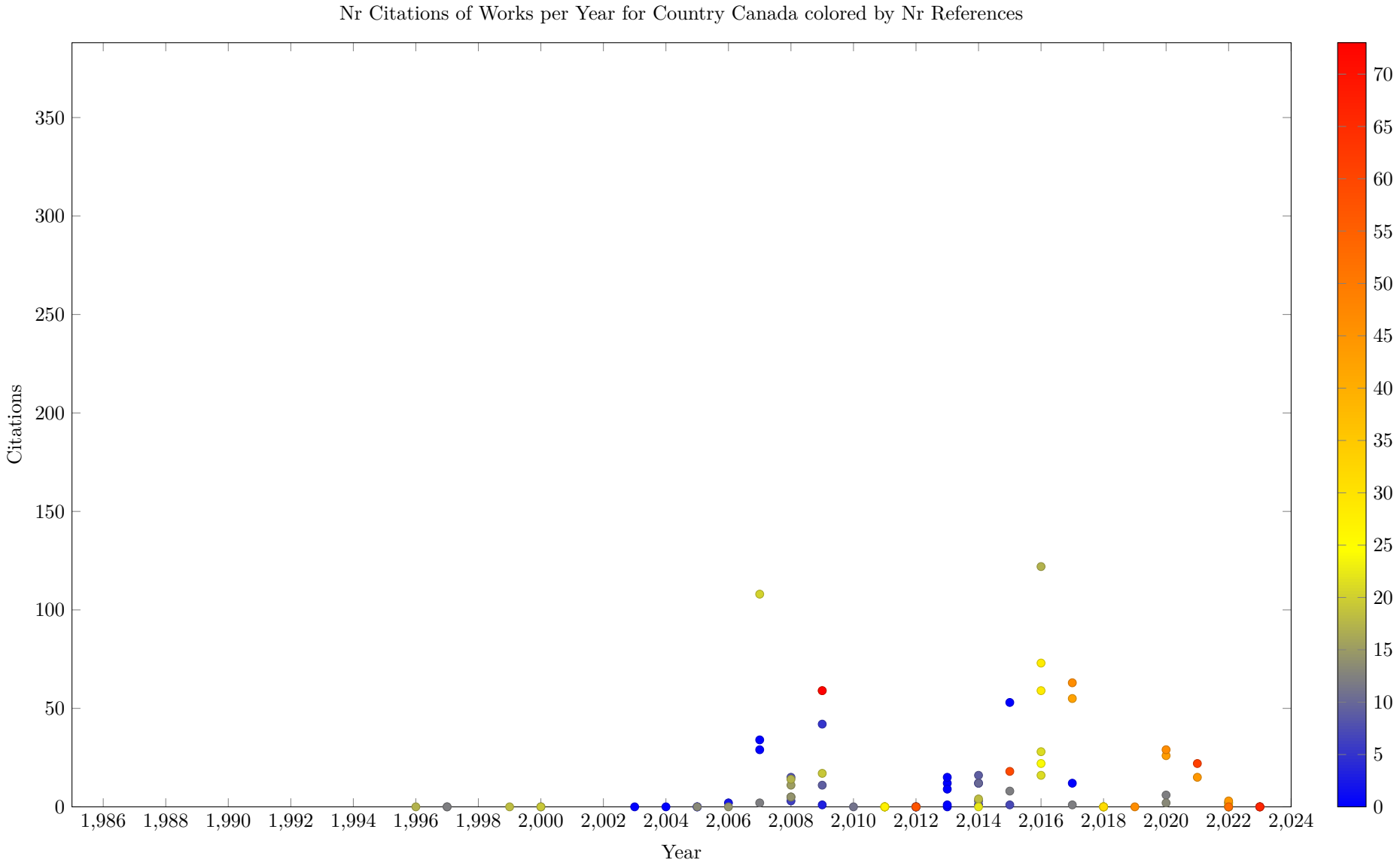

Institutions with Largest Number of Works (Total 977 Works)
Nr Works
Institutions
45
38
30
28
26
23
23
22
20
20
19
18
17
16
15
15
15
14
14
13
12
11
10
10
9
University of Toronto
Alma Mater Studiorum Università di Bologna
Université de Toulouse
University of Melbourne
International Business Machines
University College Cork
Tepper School of Business
Monash University
Charles University
Commonwealth Scientific and Industrial Research Organisation
Université Catholique de Louvain
Laboratoire d'Analyse et d'Architecture des Systèmes
IMT Atlantique
Universidad Nacional del Litoral
Polytechnique Montréal
The Royal Institute of Technology (KTH)
Carnegie Mellon University
CNRS Centre National de la Recherche Scientifique
RISE Swedish Institute of Computer Science
Universitat Politècnica de València
Technische Universität Wien
Zuse Institute Berlin
Université Laval
Bouygues
Dokuz Eylül Üniversitesi

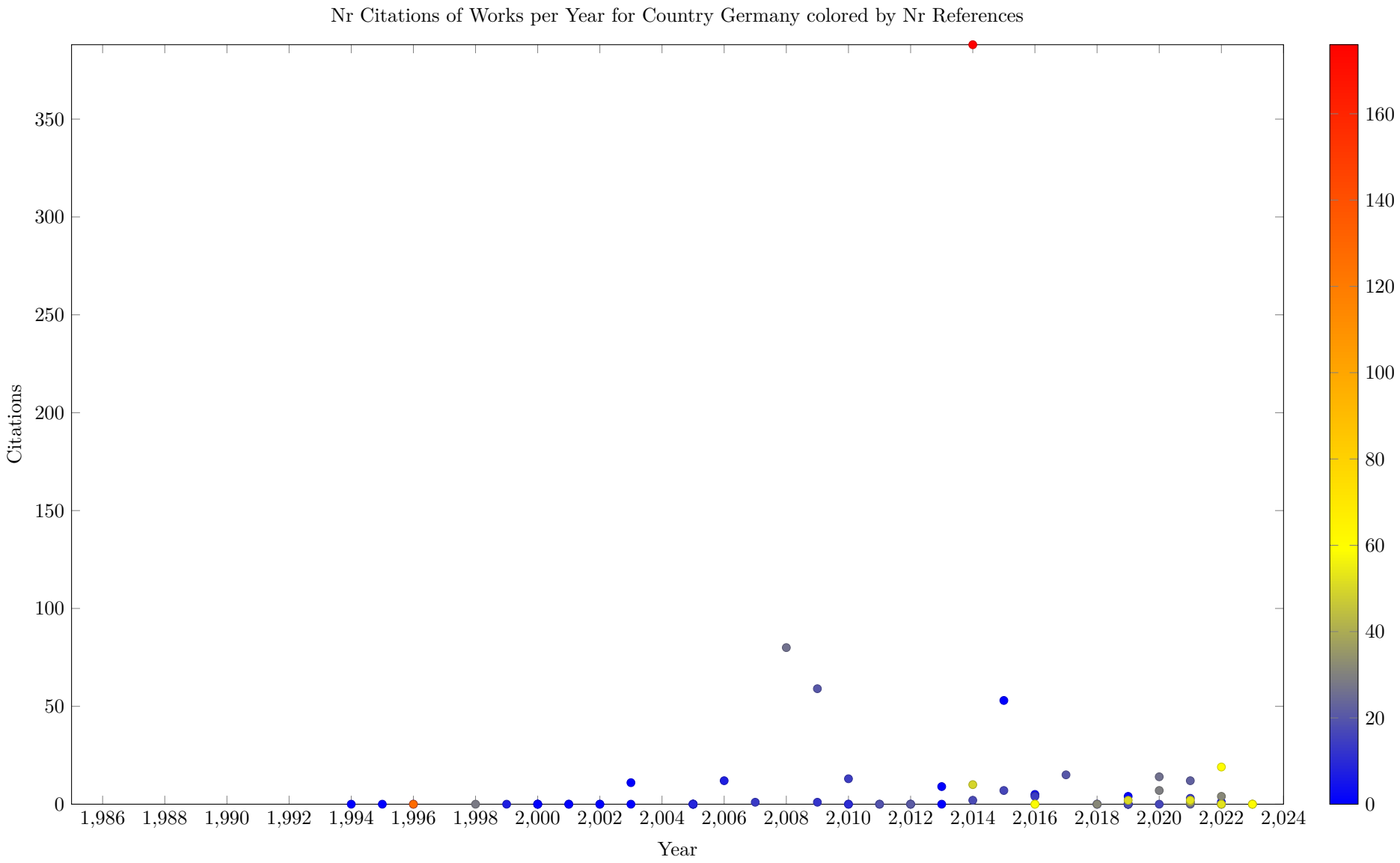
The following plots show for the top 30 countries when the works included were published, and how many citations (OpenCitation count) each paper had. The scatter plots are colored by the number of references (OpenCitation count), this help to identify surveys more easily. The plot gives an indication in which period the work from the country falls, and how influential the published works are. The x and y ranges of all plots are uniform to allow comparison between plots.

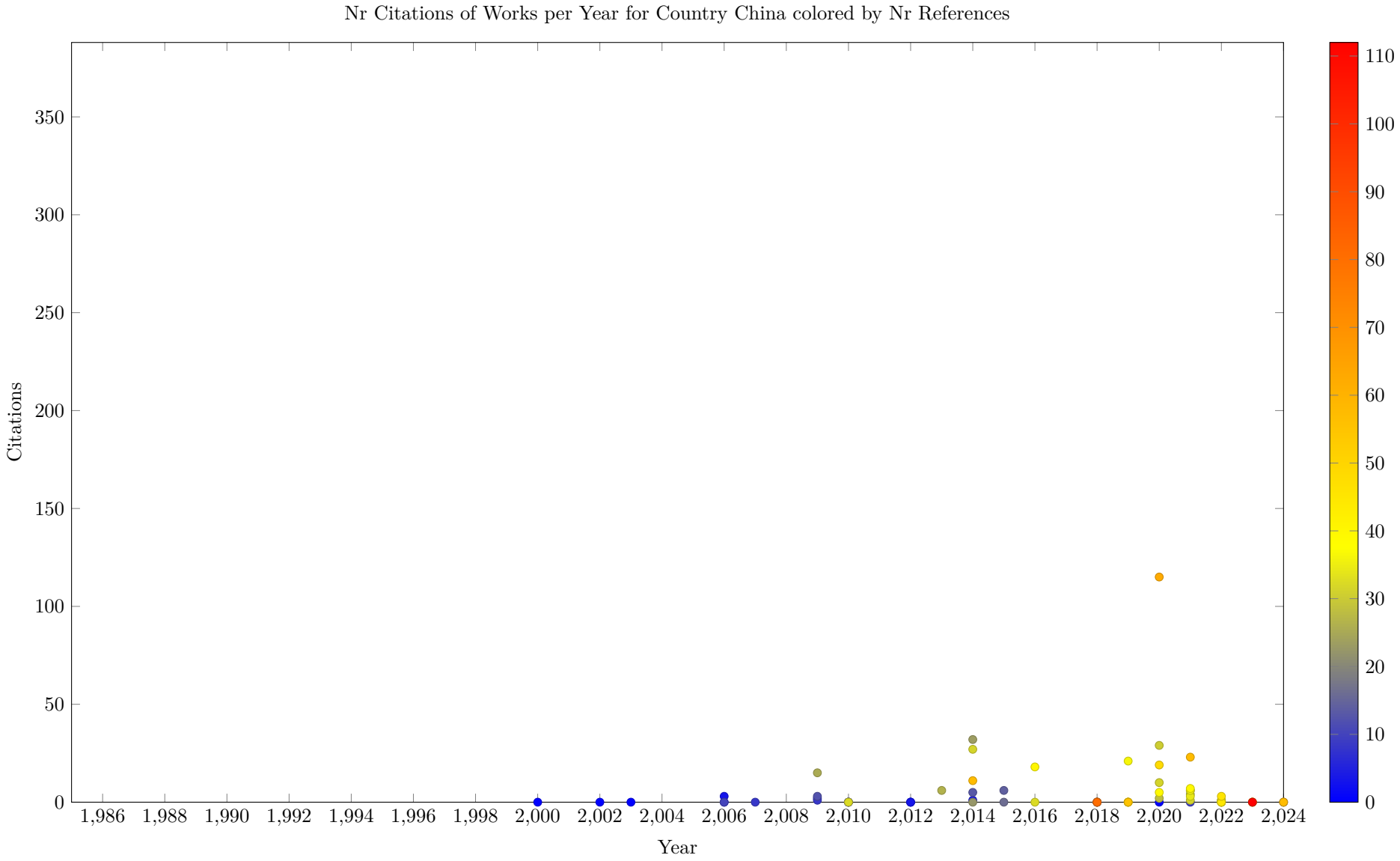
It would be nice to have tooltips on the plots, so identify specific works in the plots. This is currently not supported by the framework library used.

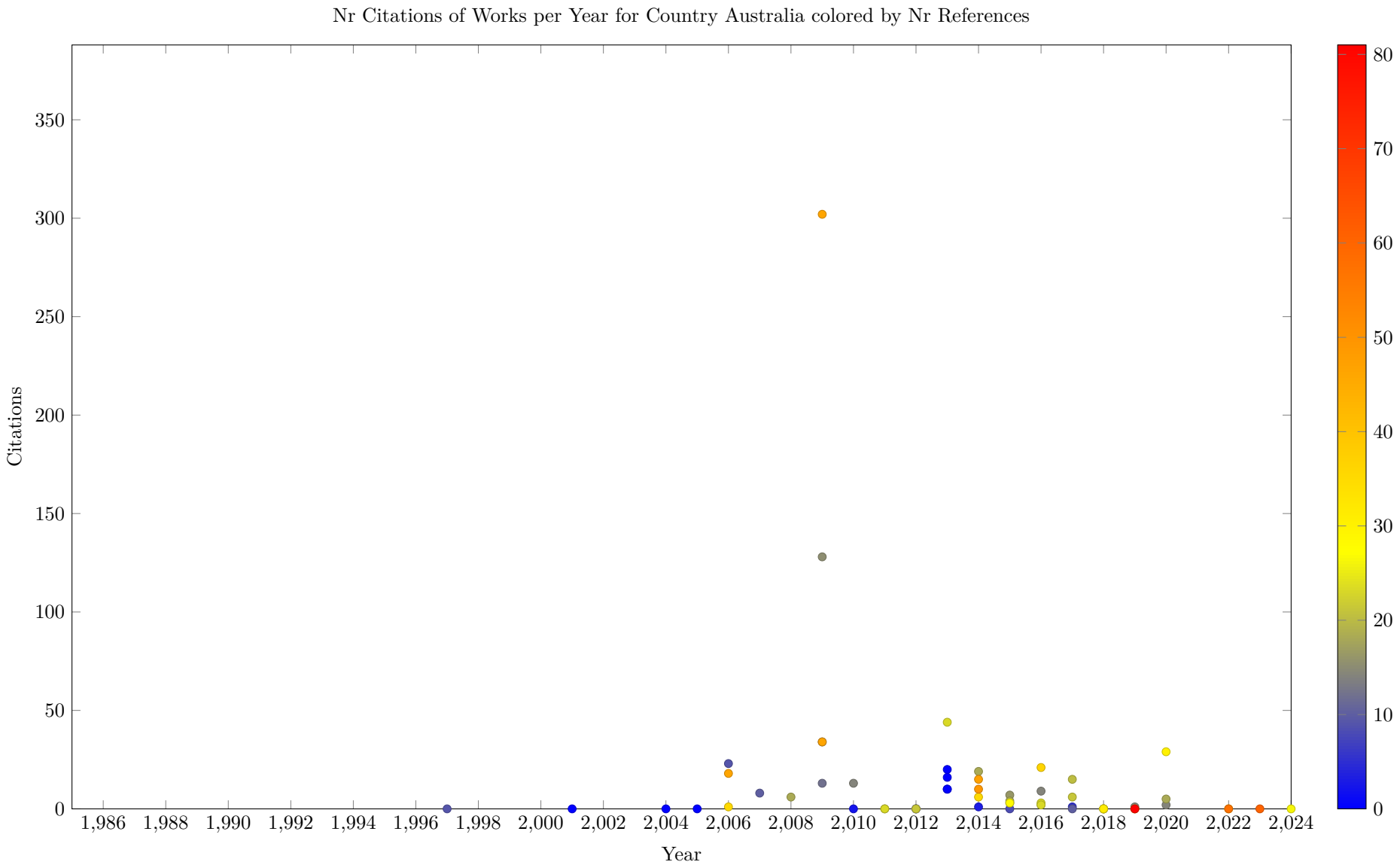

Nr Citations of Works per Year for Country France colored by Nr References
Citations
0
50
100
150
200
250
300
350
1,986
1,988
1,990
1,992
1,994
1,996
1,998
2,000
2,002
2,004
2,006
2,008
2,010
2,012
2,014
2,016
2,018
2,020
2,022
2,024
Year
0
10
20
30
40
50
60
70
80
90
100

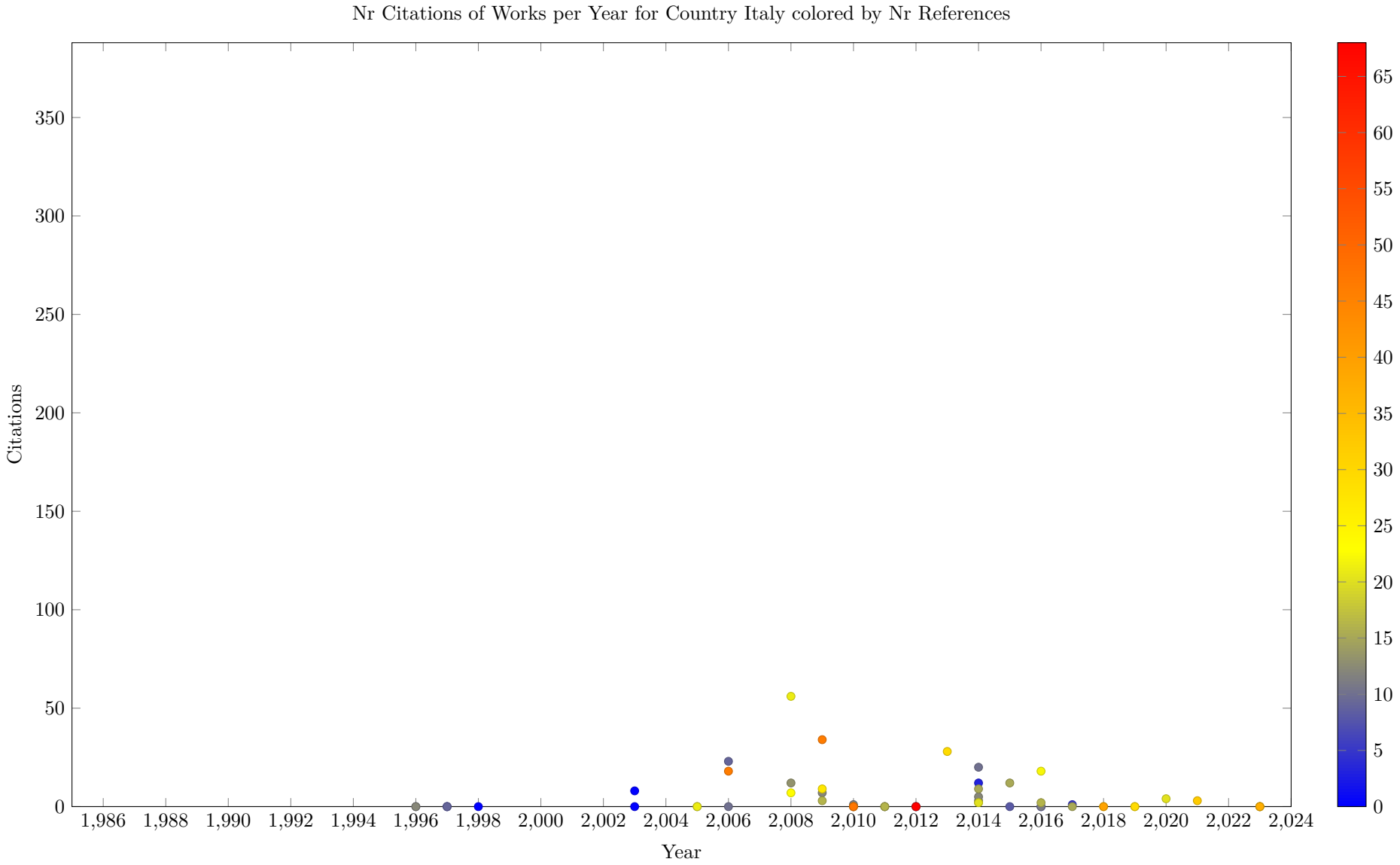

Nr Citations of Works per Year for Country United States colored by Nr References
Citations
0
50
100
150
200
250
300
350
Year
1,986
1,988
1,990
1,992
1,994
1,996
1,998
2,000
2,002
2,004
2,006
2,008
2,010
2,012
2,014
2,016
2,018
2,020
2,022
2,024
0
50
100
150
200
250
300
350
400


Nr Citations of Works per Year for Country Canada colored by Nr References
Citations
0
50
100
150
200
250
300
350
Year
1,986
1,988
1,990
1,992
1,994
1,996
1,998
2,000
2,002
2,004
2,006
2,008
2,010
2,012
2,014
2,016
2,018
2,020
2,022
2,024
0
5
10
15
20
25
30
35
40
45
50
55
60
65
70


Nr Citations of Works per Year for Country Germany colored by Nr References
Citations
0
50
100
150
200
250
300
350
Year
1,986
1,988
1,990
1,992
1,994
1,996
1,998
2,000
2,002
2,004
2,006
2,008
2,010
2,012
2,014
2,016
2,018
2,020
2,022
2,024
0
20
40
60
80
100
120
140
160


Nr Citations of Works per Year for Country China colored by Nr References
Citations
0
50
100
150
200
250
300
350
Year
1,986
1,988
1,990
1,992
1,994
1,996
1,998
2,000
2,002
2,004
2,006
2,008
2,010
2,012
2,014
2,016
2,018
2,020
2,022
2,024
0
10
20
30
40
50
60
70
80
90
100
110


Nr Citations of Works per Year for Country Australia colored by Nr References
Citations
0
50
100
150
200
250
300
350
Year
1,986
1,988
1,990
1,992
1,994
1,996
1,998
2,000
2,002
2,004
2,006
2,008
2,010
2,012
2,014
2,016
2,018
2,020
2,022
2,024
0
10
20
30
40
50
60
70
80


Nr Citations of Works per Year for Country Italy colored by Nr References
Citations
0
50
100
150
200
250
300
350
Year
1,986
1,988
1,990
1,992
1,994
1,996
1,998
2,000
2,002
2,004
2,006
2,008
2,010
2,012
2,014
2,016
2,018
2,020
2,022
2,024
0
5
10
15
20
25
30
35
40
45
50
55
60
65


Nr Citations of Works per Year for Country United Kingdom colored by Nr References
Citations
0
50
100
150
200
250
300
350
Year
1,986
1,988
1,990
1,992
1,994
1,996
1,998
2,000
2,002
2,004
2,006
2,008
2,010
2,012
2,014
2,016
2,018
2,020
2,022
2,024
0
20
40
60
80
100
120
140


Nr Citations of Works per Year for Country Sweden colored by Nr References
Citations
0
50
100
150
200
250
300
350
Year
1,986
1,988
1,990
1,992
1,994
1,996
1,998
2,000
2,002
2,004
2,006
2,008
2,010
2,012
2,014
2,016
2,018
2,020
2,022
2,024
0
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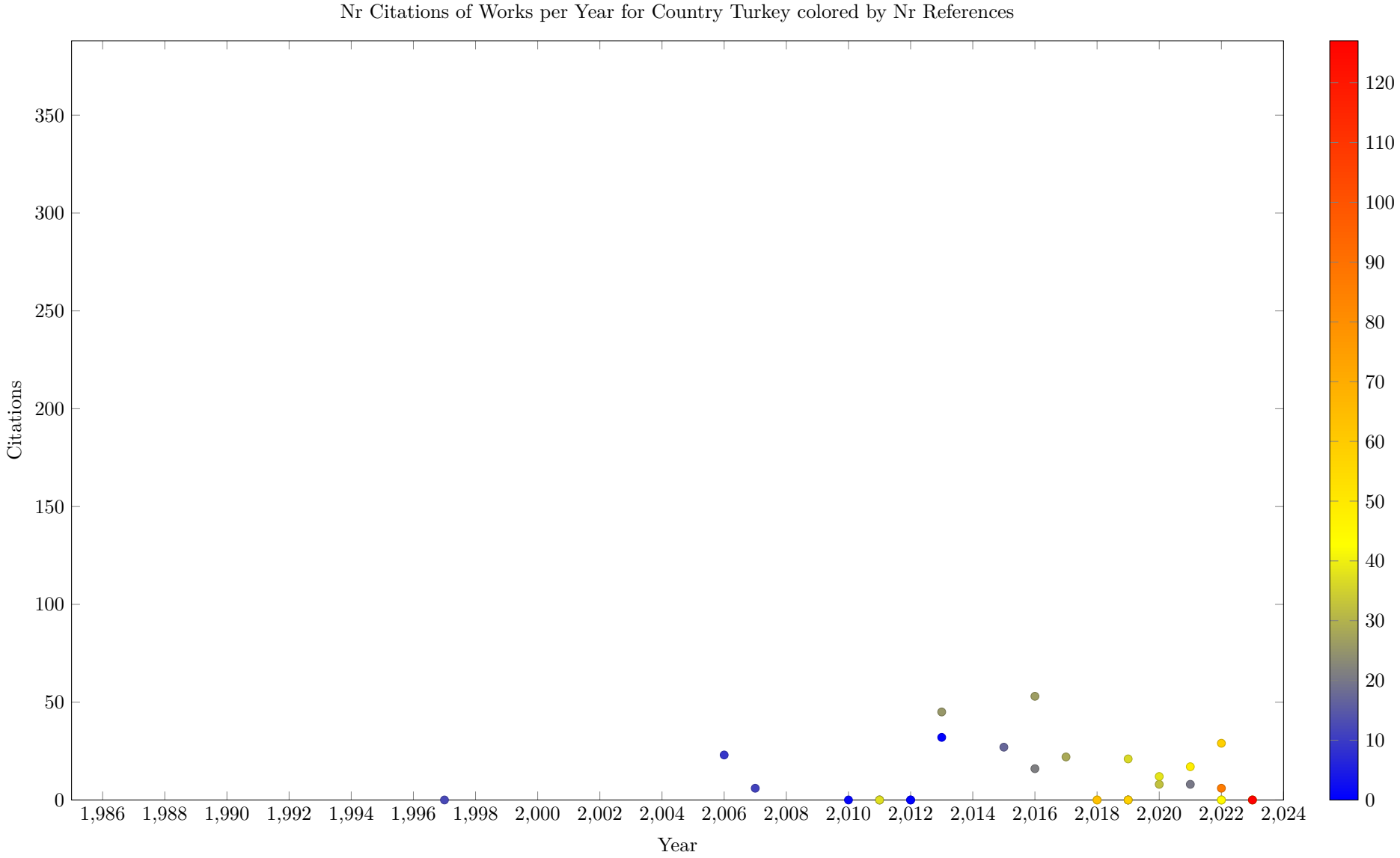
20
30
40
50
60
70
80
90


Nr Citations of Works per Year for Country Turkey colored by Nr References
Citations
0
50
100
150
200
250
300
350
Year
1,986
1,988
1,990
1,992
1,994
1,996
1,998
2,000
2,002
2,004
2,006
2,008
2,010
2,012
2,014
2,016
2,018
2,020
2,022
2,024
0
10
20
30
40
50
60
70
80
90
100
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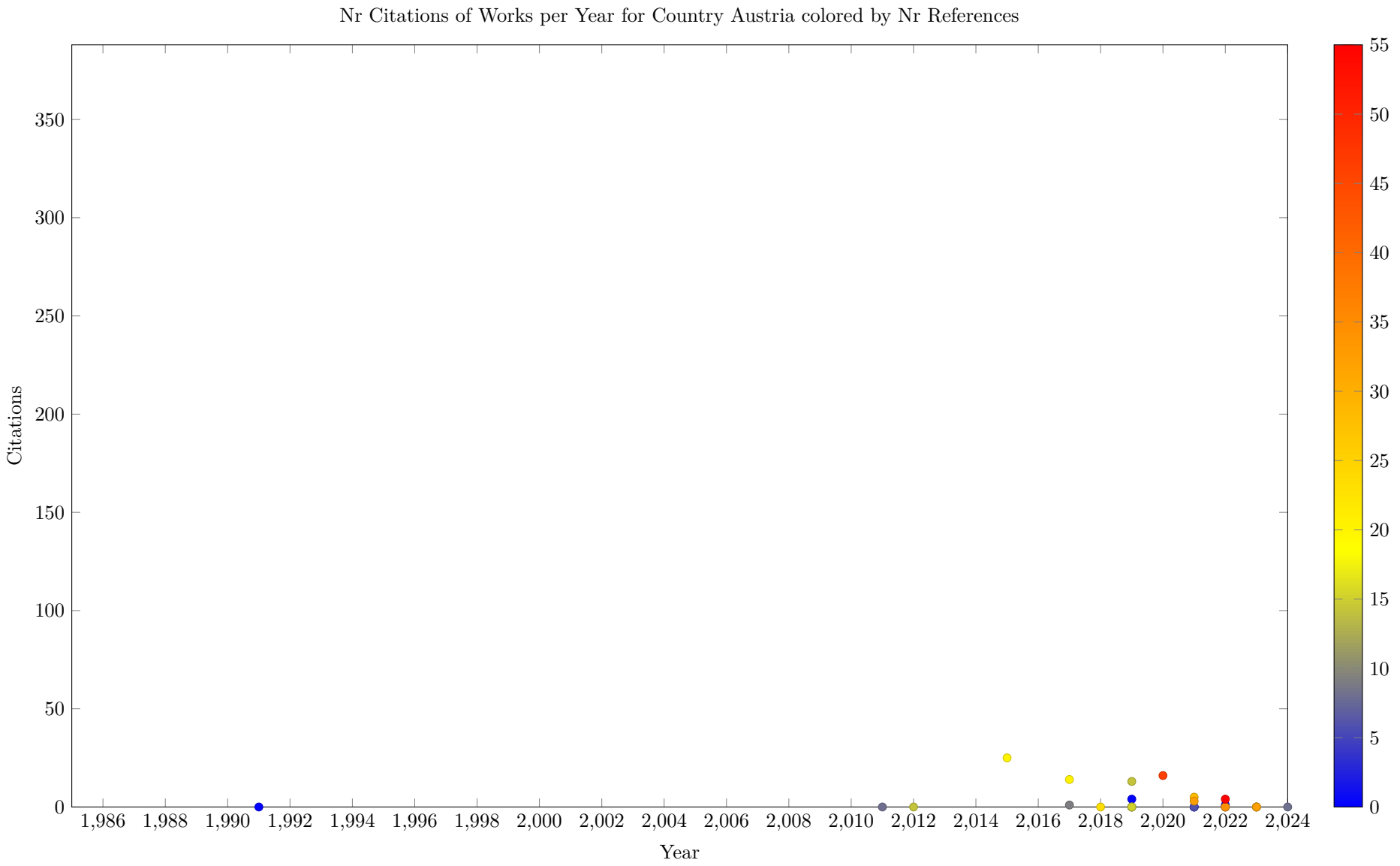
Nr Citations of Works per Year for Country Austria colored by Nr References
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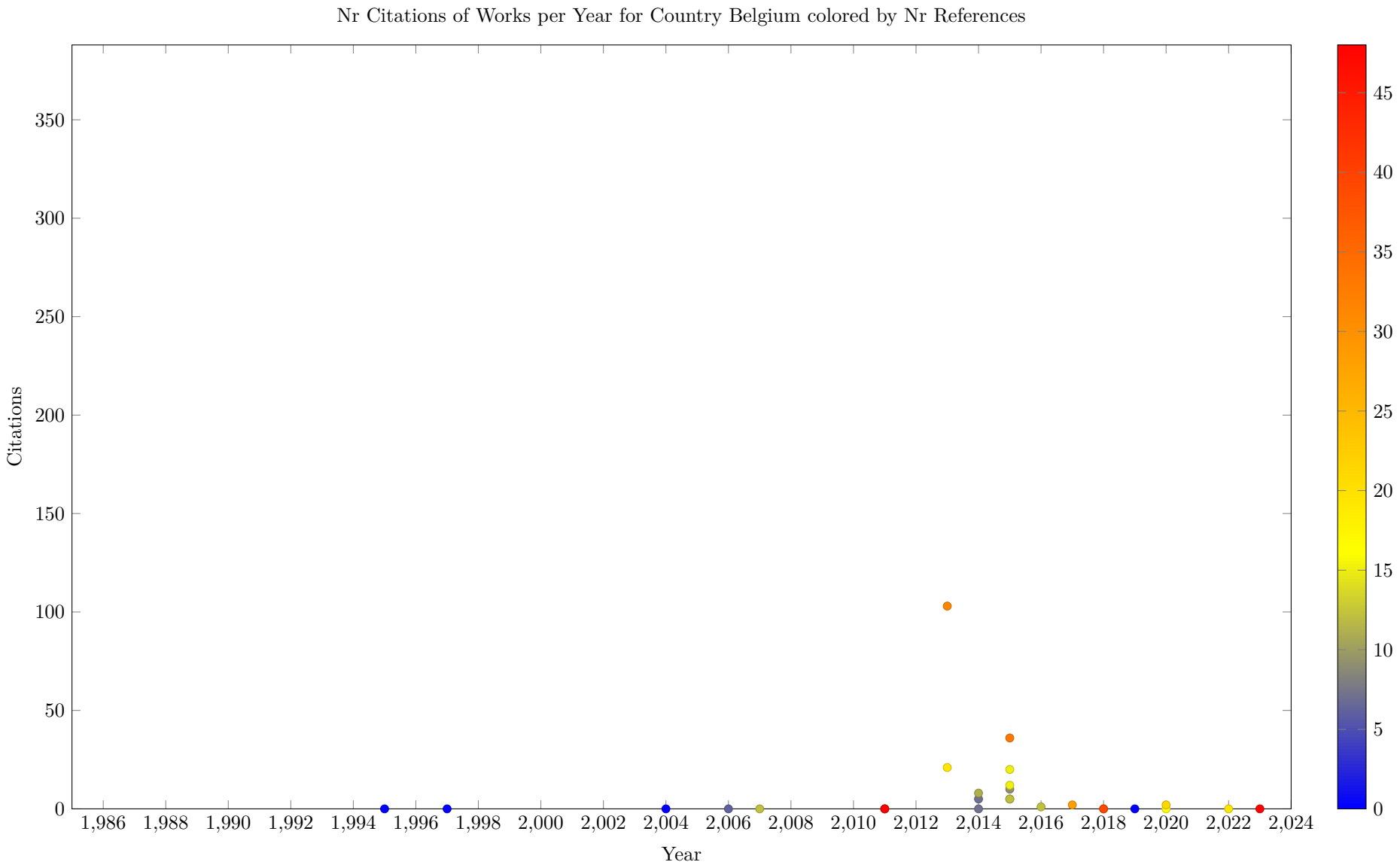
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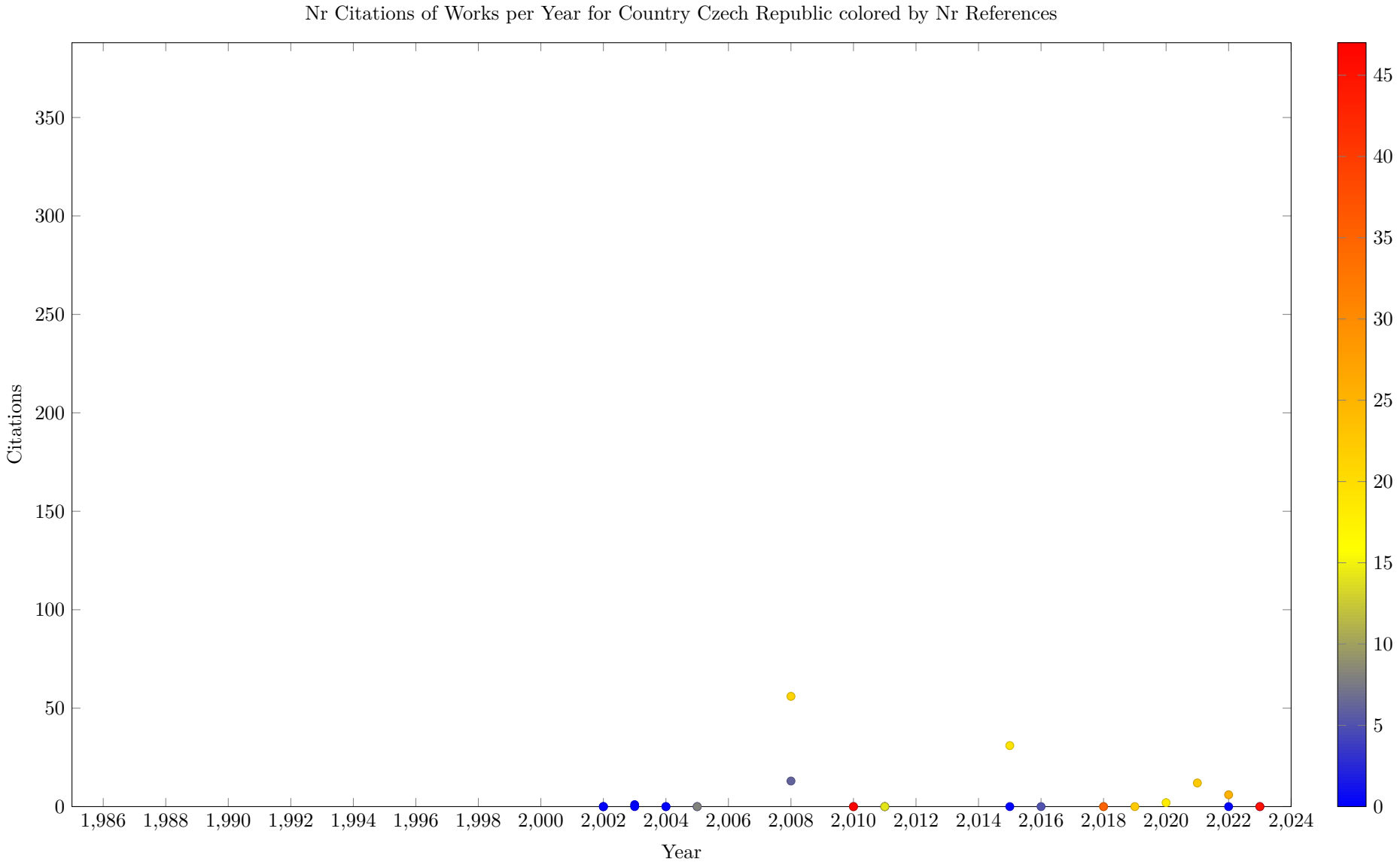
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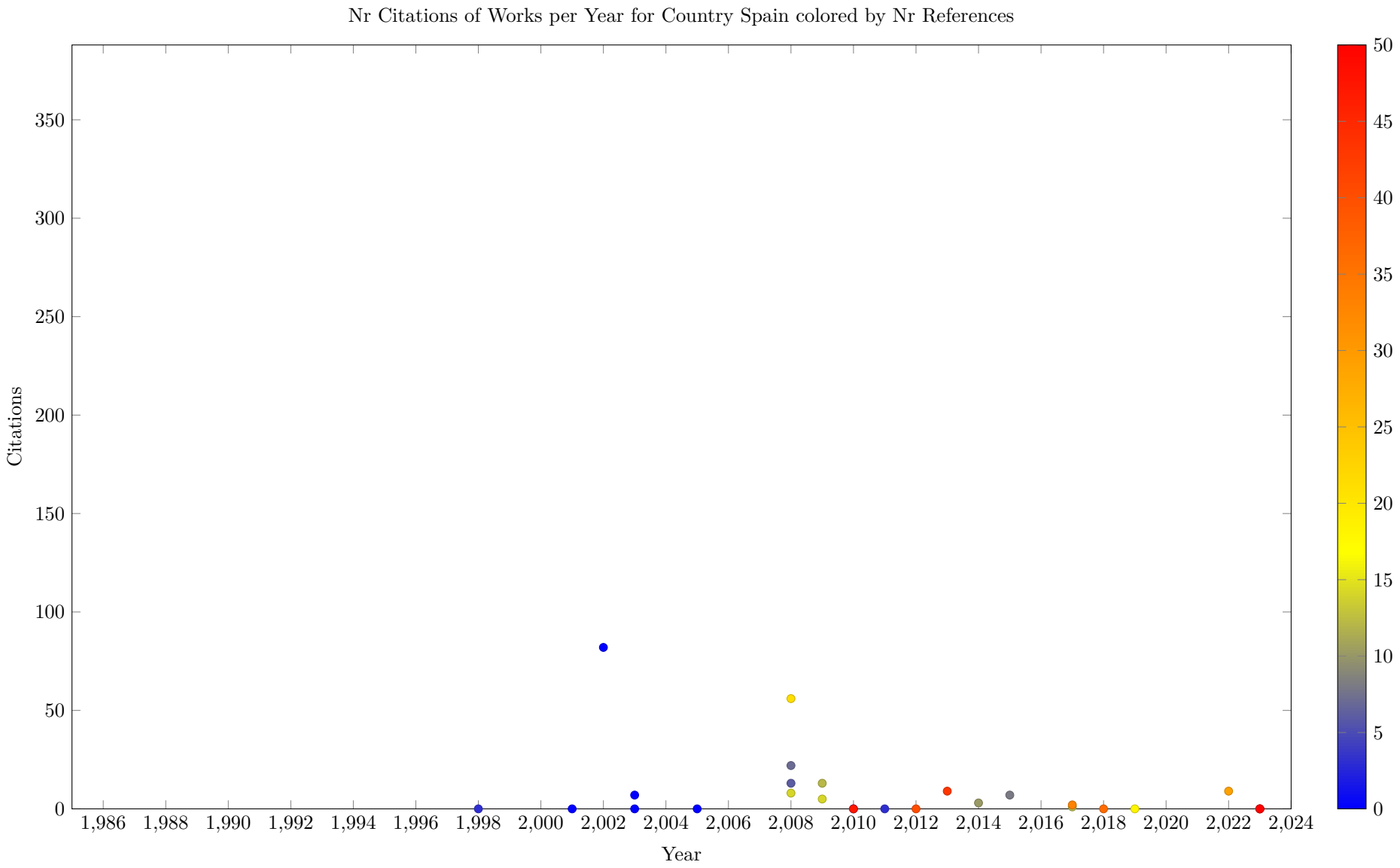
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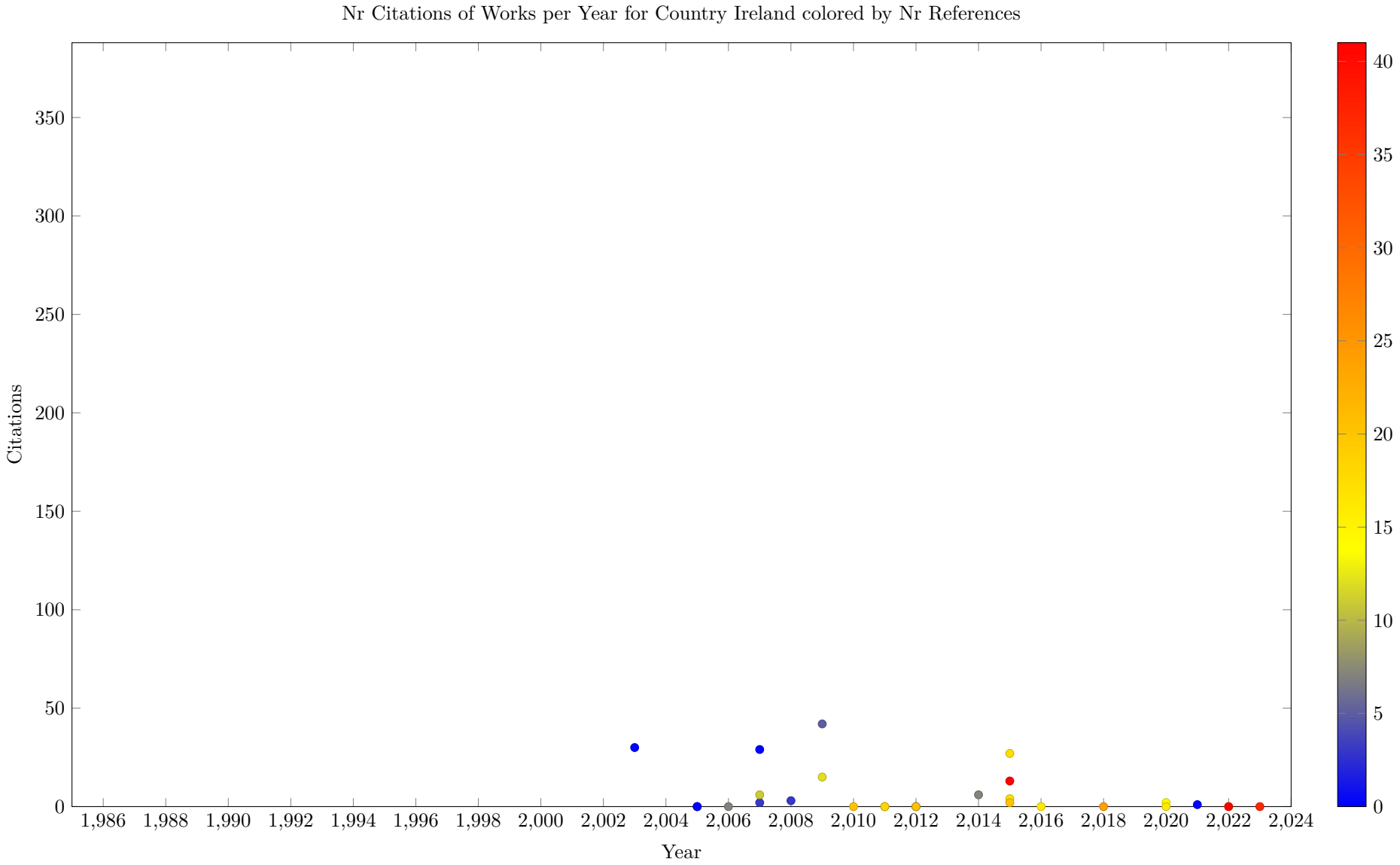
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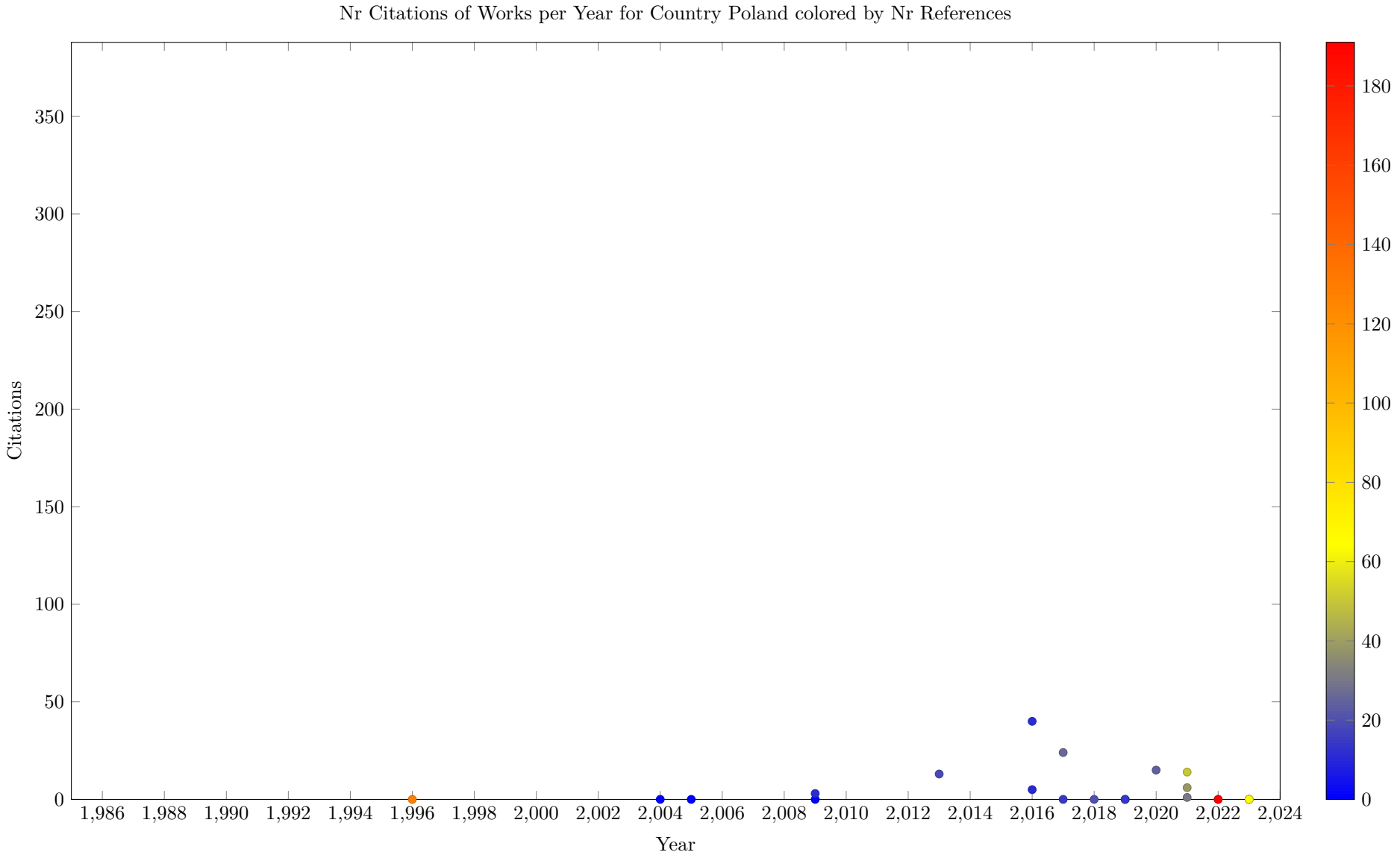
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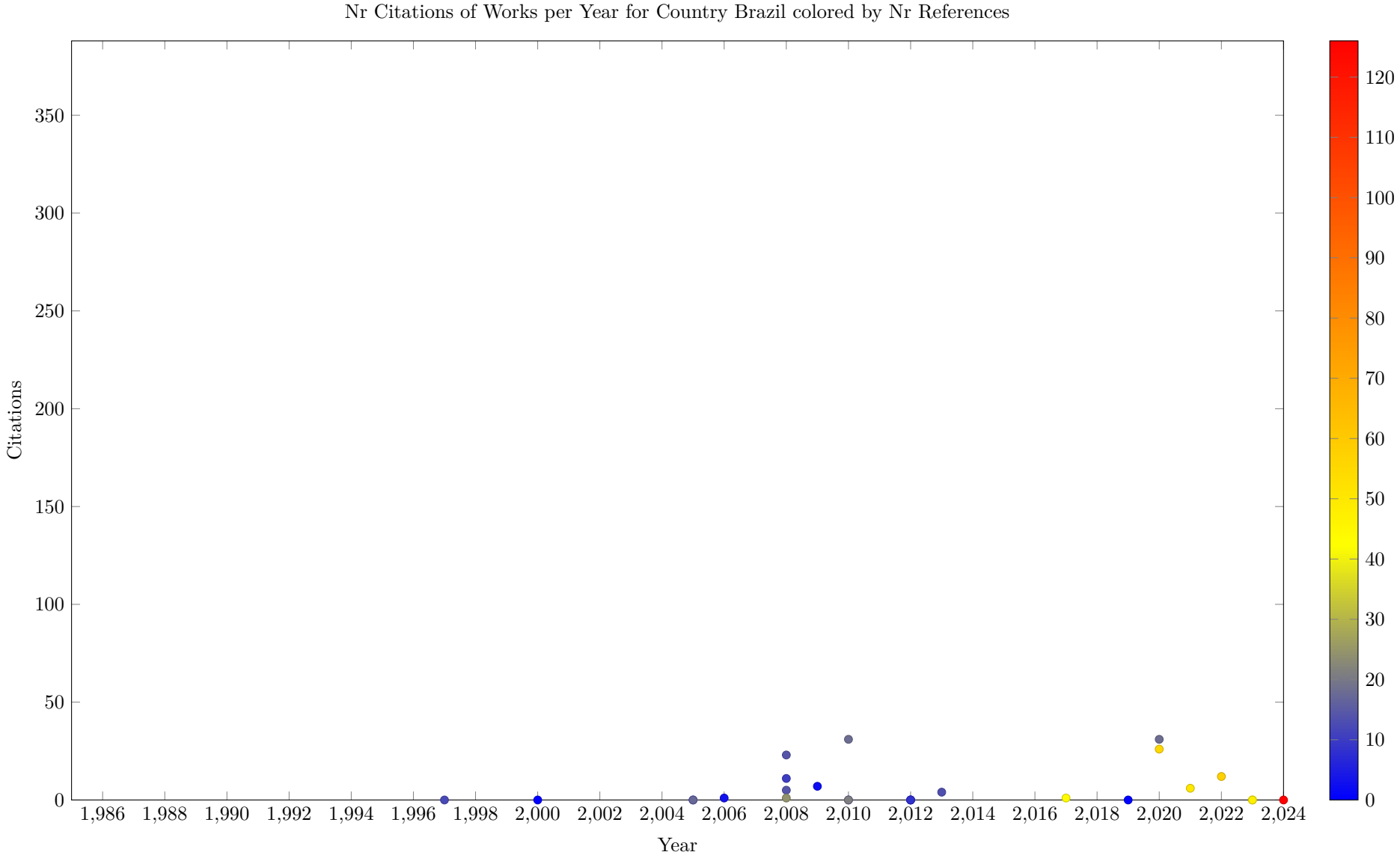
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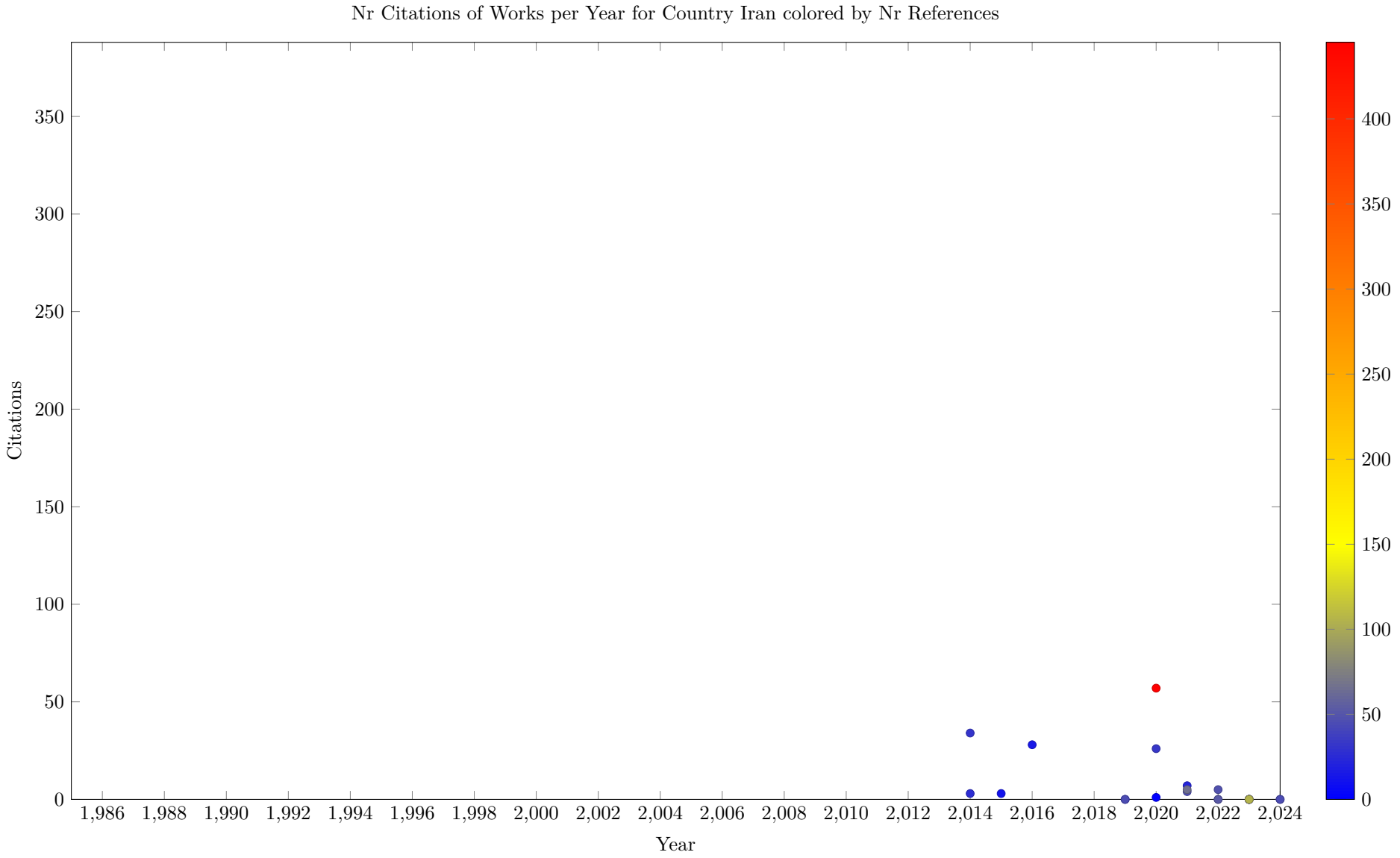
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Nr Citations of Works per Year for Country Netherlands colored by Nr References
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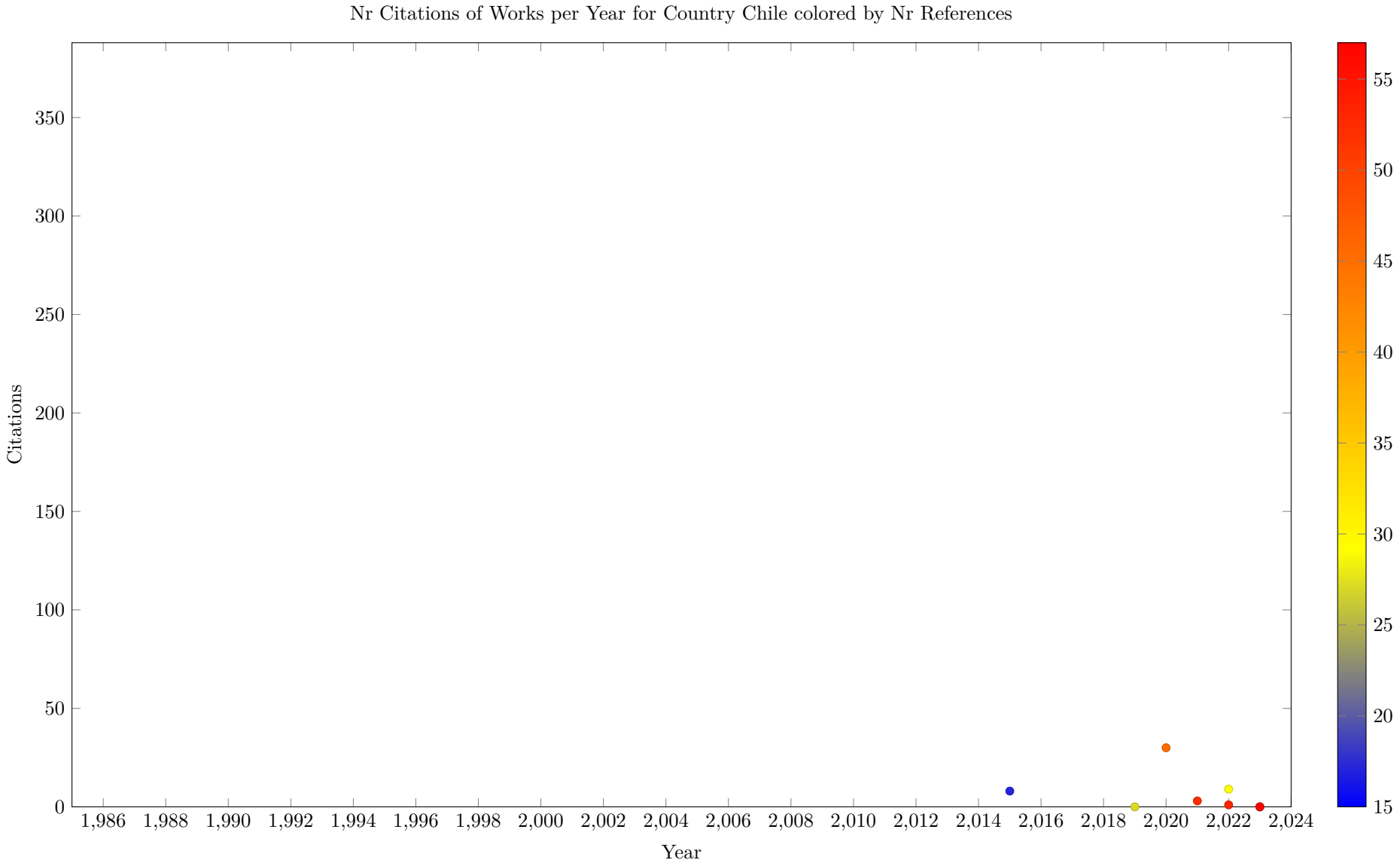
Nr Citations of Works per Year for Country Chile colored by Nr References
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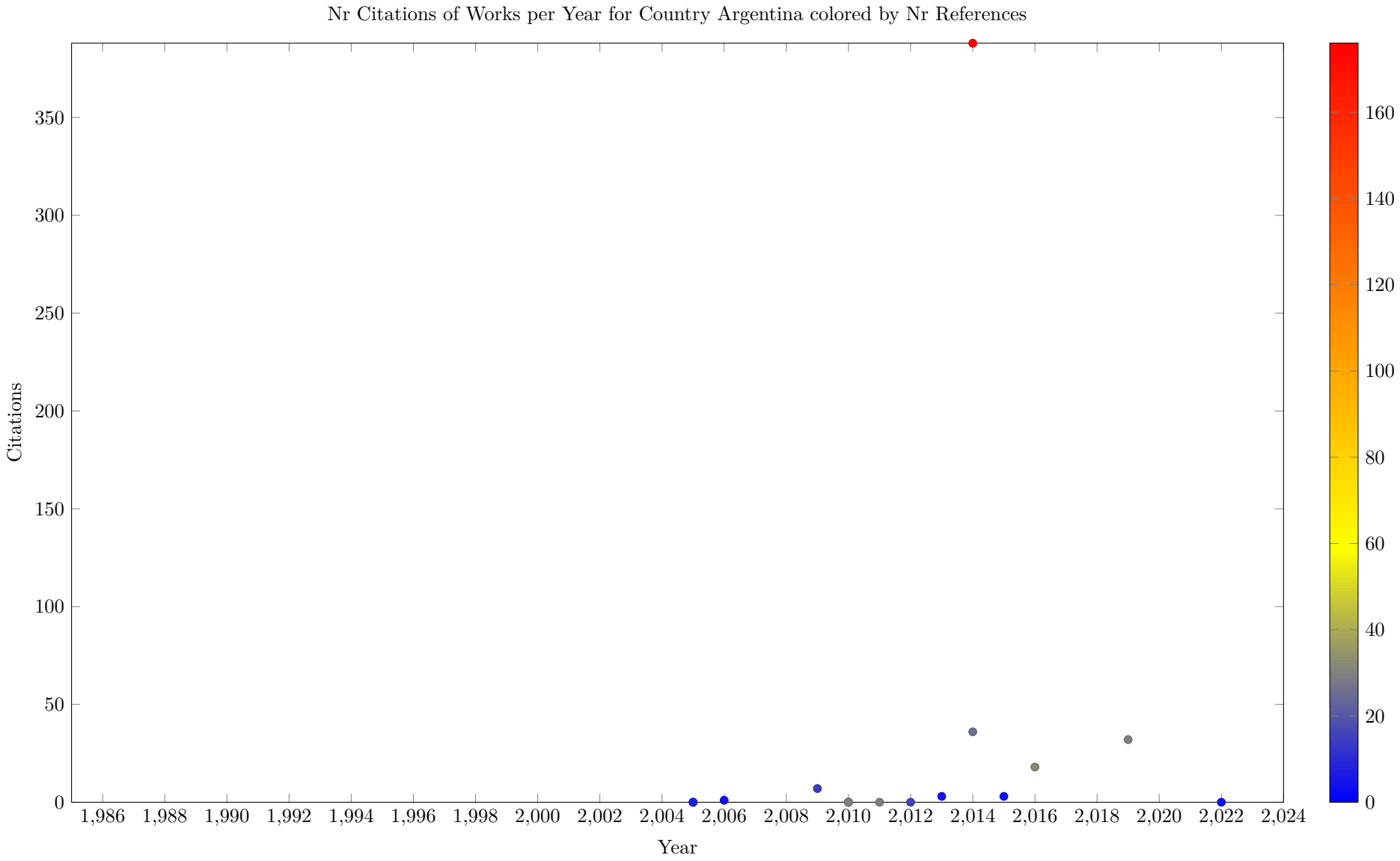
Nr Citations of Works per Year for Country Argentina colored by Nr References
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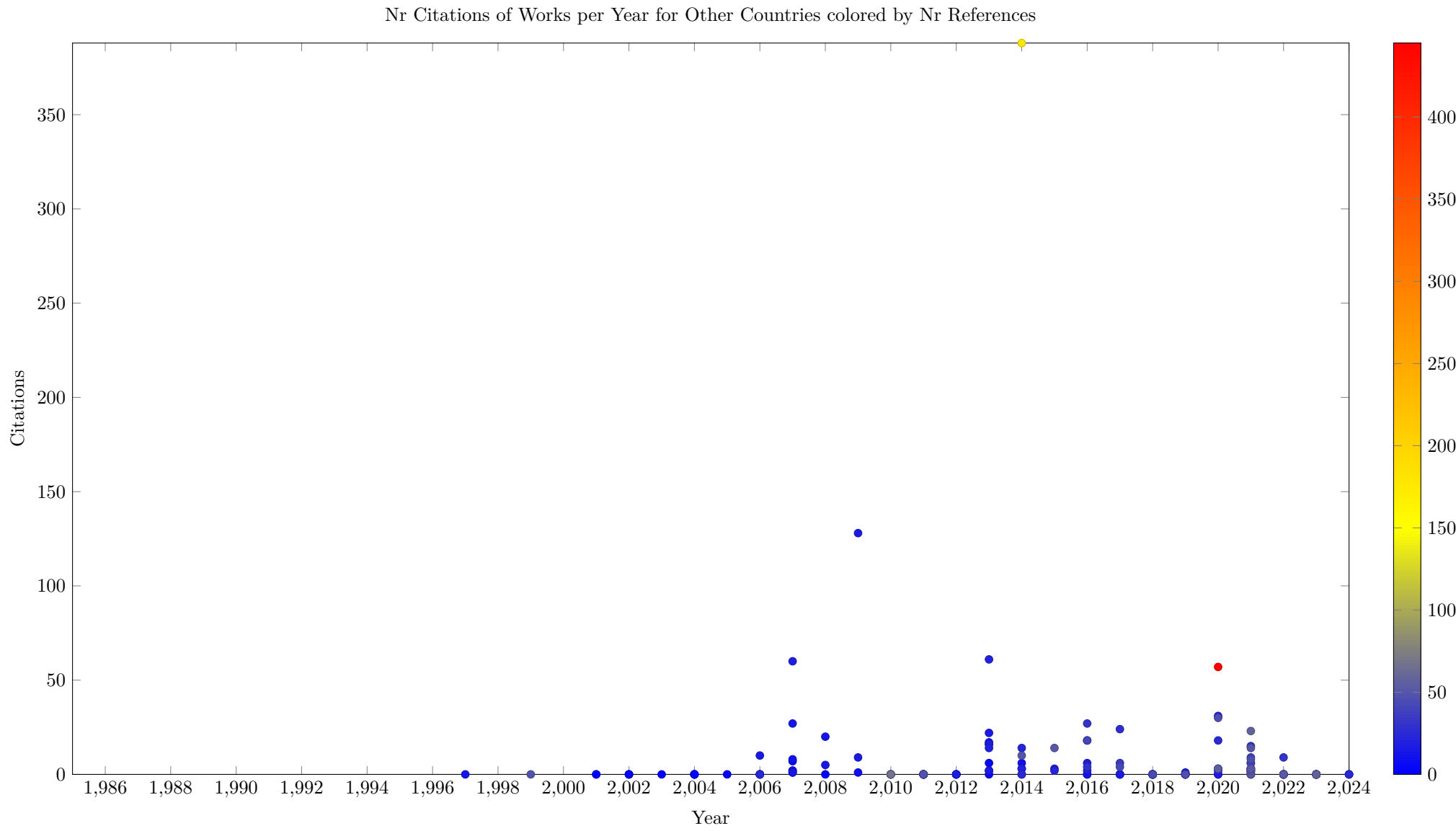
Nr Citations of Works per Year for Other Countries colored by Nr References
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4 Collaborations

This section shows data about collaborations between multiple affiliations for the same work. This is based on Scopus data, which associates the affiliation with the work, not with each author of the work. The analysis excludes background work.

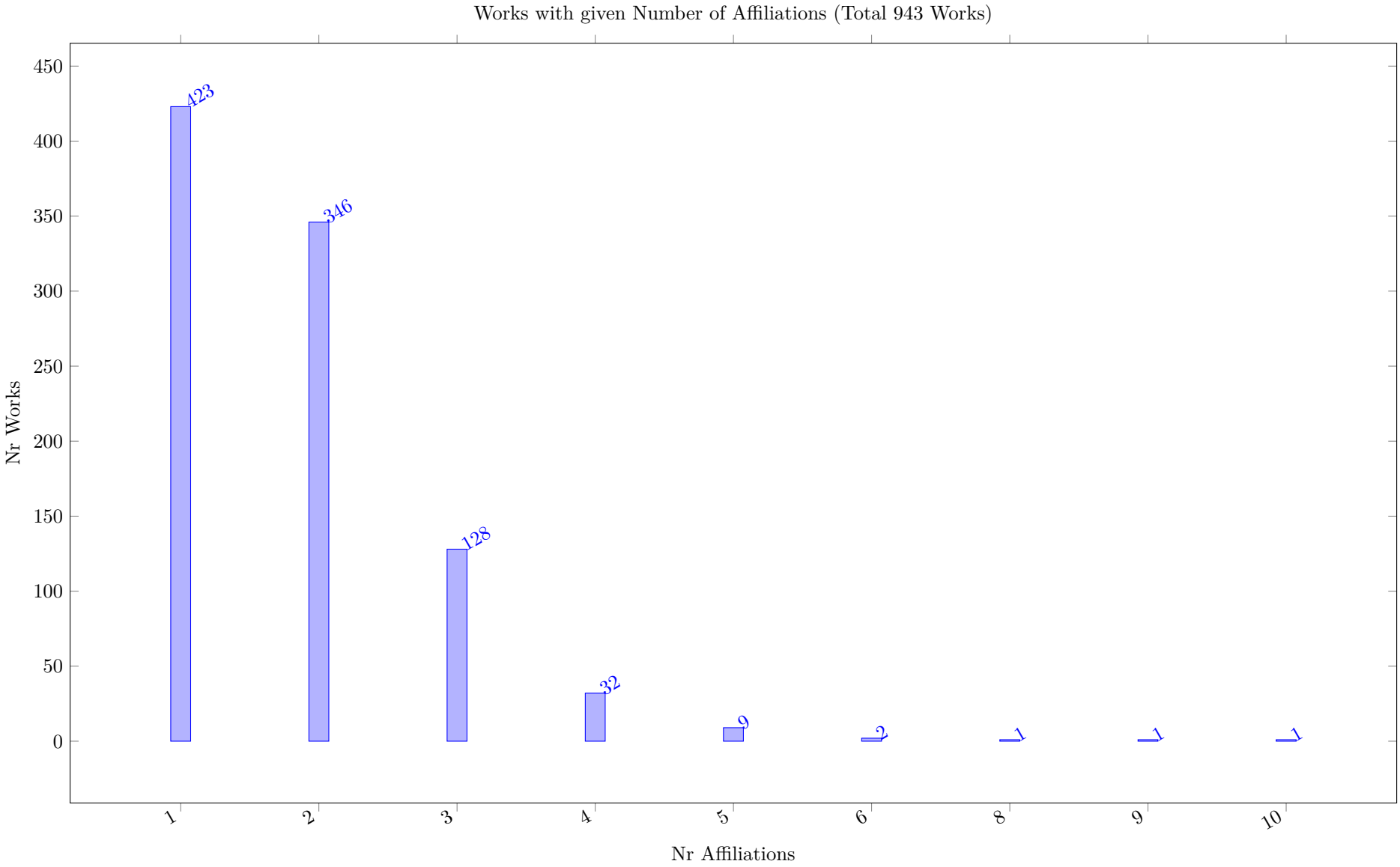
Works with given Number of Affiliations (Total 943 Works)
Nr Works
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Table 8: Collaboration Data (Top 45 Inst by Decreasing Collab Fraction)

Inst	Nr Works	Collab Count	Domestic Collab	International Collab	Collab Fraction	Domestic Fraction	International Fraction	Collab Percentage	International Percentage
University of Toronto, Toronto, Canada	45	43	18	25	28.00	8.50	19.50	62.22	43.33
Université de Toulouse, Toulouse, France	30	40	20	20	23.00	15.83	7.17	76.67	23.89
University of Melbourne, Melbourne, Australia	28	34	23	11	22.00	15.00	7.00	78.57	25.00
Commonwealth Scientific and Industrial Research Organisation, Canberra, Australia	20	37	25	12	20.00	15.33	4.67	100.00	23.33
Monash University, Clayton, Australia	22	28	19	9	19.00	13.50	5.50	86.36	25.00
University College Cork, Cork, Ireland	23	31	6	25	17.00	1.76	15.24	73.91	66.25
Alma Mater Studiorum Università di Bologna, Bologna, Italy	38	26	6	20	16.00	3.83	12.17	42.11	32.02
Laboratoire d'Analyse et d'Architecture des Systemes, Toulouse, France	17	23	18	5	16.00	13.00	3.00	94.12	17.65
International Business Machines, Armonk, United States	26	20	2	18	15.00	2.00	13.00	57.69	50.00
IMT Atlantique, Nantes, France	18	17	7	10	14.00	5.00	9.00	77.78	50.00
The Royal Institute of Technology (KTH), Stockholm, Sweden	15	25	18	7	14.00	10.67	3.33	93.33	22.22
RISE, Swedish Institute of Computer Science, Kista, Sweden	14	16	5	11	12.00	4.00	8.00	85.71	57.14
CNRS Centre National de la Recherche Scientifique, Paris, France	14	14	9	5	10.00	7.00	3.00	71.43	21.43
Tepper School of Business, Pittsburgh, United States	23	19	7	12	10.00	3.33	6.67	43.48	28.99
Polytechnique Montréal, Montreal, Canada	15	11	7	4	9.00	6.50	2.50	60.00	16.67
Technische Universität Wien, Vienna, Austria	12	10	6	4	9.00	6.00	3.00	75.00	25.00
Charles University, Prague, Czech Republic	20	12	5	7	9.00	4.50	4.50	45.00	22.50
Université Catholique de Louvain, Louvain-la-Neuve, Belgium	19	12	2	10	9.00	1.33	7.67	47.37	40.35
University of Connecticut, Storrs, United States	8	12	8	4	8.00	5.83	2.17	100.00	27.08
Rotman School of Management, Toronto, Canada	8	19	15	4	8.00	6.17	1.83	100.00	22.92
Universidade de São Paulo, Sao Paulo, Brazil	8	9	5	4	7.00	4.50	2.50	87.50	31.25
Dokuz Eylül Üniversitesi, Izmir, Turkey	9	8	6	2	7.00	5.00	2.00	77.78	22.22
Universitat Politècnica de València, Valencia, Spain	13	10	1	9	7.00	1.00	6.00	53.85	46.15
Politechnika Koszalinska, Koszalin, Poland	8	11	8	3	7.00	5.00	2.00	87.50	25.00
Zuse Institute Berlin, Berlin, Germany	11	9	6	3	7.00	4.50	2.50	63.64	22.73
Bouygues, Paris, France	10	8	6	2	7.00	5.00	2.00	70.00	20.00
Université d'Avignon et des Pays du Vaucluse, Avignon, France	8	10	8	2	7.00	5.00	2.00	87.50	25.00
Brown University, Providence, United States	8	13	7	6	6.00	4.53	1.47	75.00	18.33
Université de Maroua, Maroua, Cameroon	6	10	6	4	6.00	3.67	2.33	100.00	38.89
ABB Corporate Research, Vasteras, Vasteras, Sweden	6	12	10	2	6.00	5.00	1.00	100.00	16.67
Izmir Ekonomi Universitesi, Izmir, Turkey	8	12	5	7	6.00	3.50	2.50	75.00	31.25
Magyar Tudomanyos Akademia, Budapest, Hungary	9	7	1	6	6.00	1.00	5.00	66.67	55.56
University of Windsor, Windsor, Canada	6	13	11	2	6.00	5.17	0.83	100.00	13.89
Universidad Nacional del Litoral, Santa Fe, Argentina	16	14	4	10	6.00	4.00	2.00	37.50	12.50
Université Laval, Quebec, Canada	10	10	3	7	5.00	2.00	3.00	50.00	30.00
Université Grenoble Alpes, Saint Martin d'Heres, France	5	8	7	1	5.00	4.67	0.33	100.00	6.67
National University of Singapore, Singapore City, Singapore	5	7	1	6	5.00	0.50	4.50	100.00	90.00
Czech Institute of Informatics, Robotics and Cybernetics, Prague, Czech Republic	5	7	3	4	5.00	2.50	2.50	100.00	50.00
University of Tehran, Tehran, Iran	7	7	1	6	5.00	1.00	4.00	71.43	57.14
Huazhong University of Science and Technology, Wuhan, China	5	13	9	4	5.00	3.50	1.50	100.00	30.00
Aalborg University, Aalborg, Denmark	5	8	0	8	5.00	0.00	5.00	100.00	100.00
Sorbonne Université, Paris, France	6	7	6	1	5.00	4.00	1.00	83.33	16.67
Universite Catholique de L'Ouest, Angers, France	6	10	10	0	5.00	5.00	0.00	83.33	0.00
Compagnie IBM France, Bois-Colombes, France	8	7	3	4	5.00	2.00	3.00	62.50	37.50
University of Luxembourg, Esch-sur-Alzette, Luxembourg	5	8	0	8	5.00	0.00	5.00	100.00	100.00

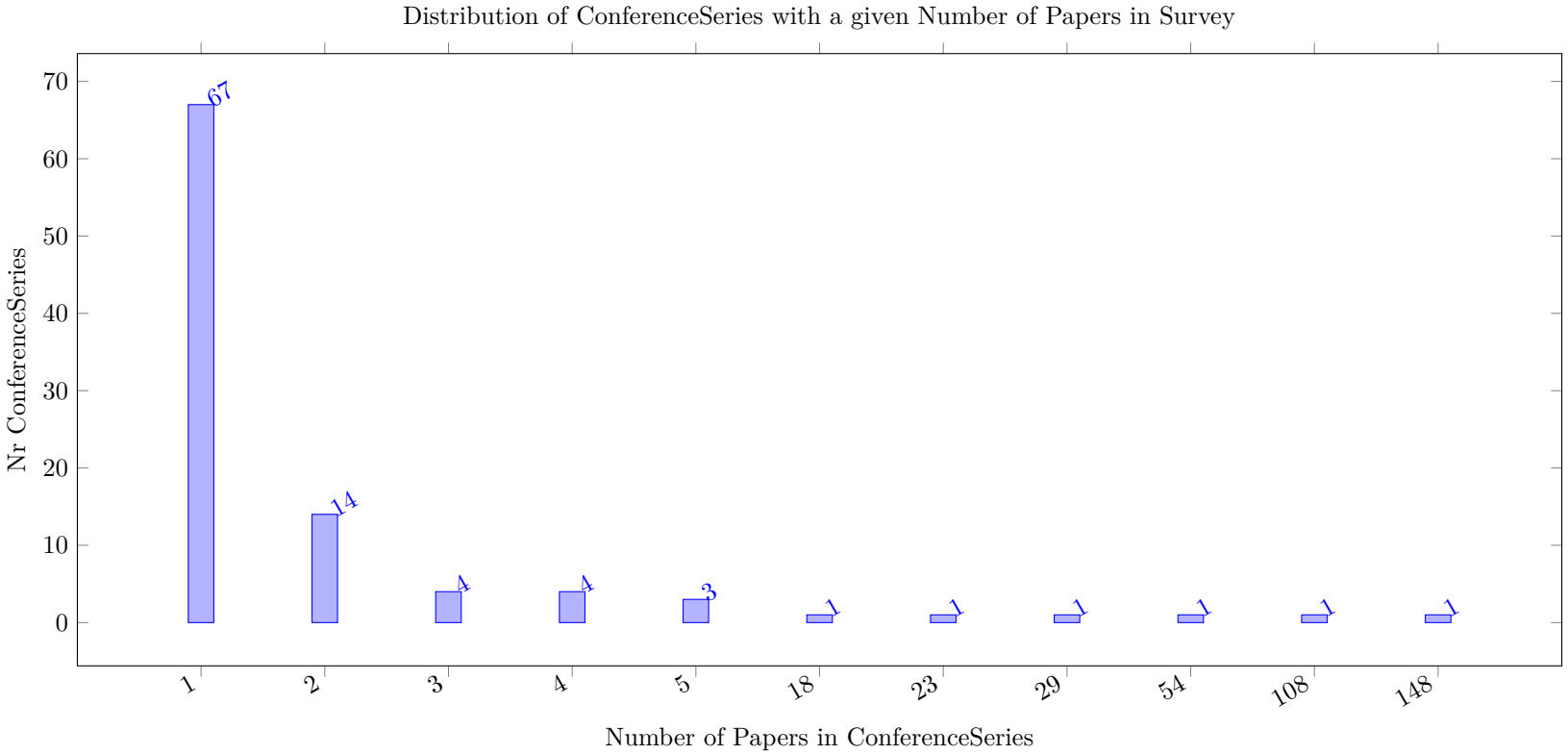
Table 9: Heat Map based on Collaboration between Countries (Fractional Count)

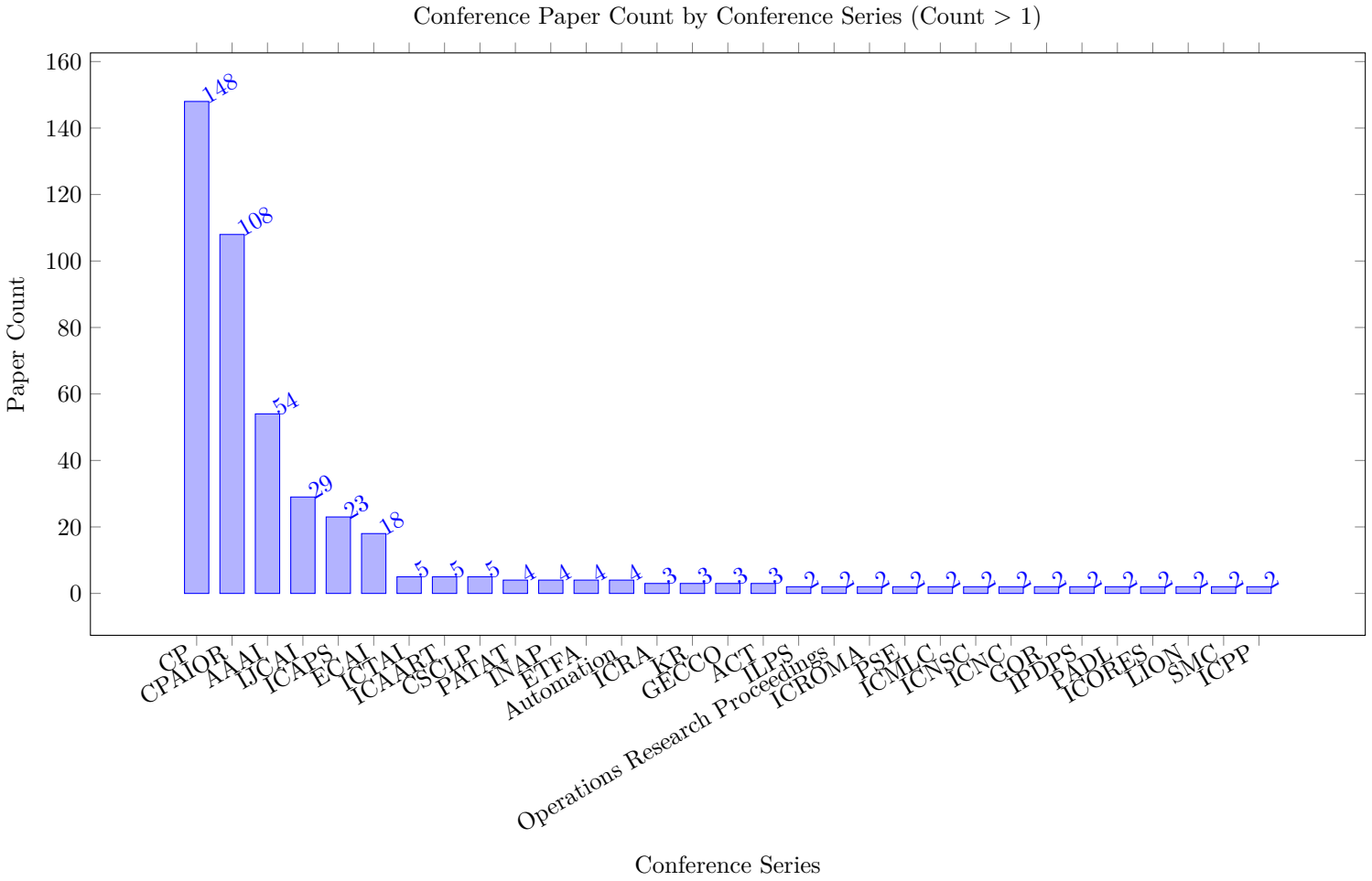
From/To	Total	France	United States	Canada	China	Australia	Germany	Sweden	Italy	Turkey	Austria	United Kingdom	Ireland	Poland	Czech Republic	Chile	Belgium	Spain	Brazil	Iran	Denmark	Taiwan	Singapore	Norway	South Korea	Greece	Other
Total		207.00	152.00	96.00	91.00	81.00	67.00	50.00	41.00	37.00	33.00	30.00	29.00	25.00	22.00	22.00	21.00	20.00	19.00	17.00	15.00	15.00	13.00	13.00	12.00	12.00	
France	207.00	143.33	11.12	3.50	2.00	1.00	3.48	9.50	0.83	0.00	0.00	3.00	6.07	1.00	2.50	1.00	4.33	0.00	1.50	0.50	1.00	0.50	0.00	2.58	0.00	0.25	8.00
United States	152.00	11.12	73.69	9.83	6.67	2.67	3.01	4.00	3.17	4.50	0.00	0.83	5.98	0.00	0.00	1.00	2.53	0.00	1.50	3.50	4.00	1.00	0.00	0.00	3.67	0.00	9.34
Canada	96.00	3.50	9.83	61.00	1.00	0.33	4.33	0.00	1.00	1.50	0.00	0.00	3.50	0.00	0.00	0.00	1.00	1.00	0.00	3.00	0.00	0.00	0.00	0.00	0.00	0.00	5.00
China	91.00	2.00	6.67	1.00	64.00	1.00	0.00	0.00	1.00	2.33	0.00	2.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.83	0.00	0.00	0.00	4.50
Australia	81.00	1.00	2.67	0.33	1.00	55.67	5.17	0.00	4.92	0.25	1.00	1.00	0.50	0.00	0.00	0.00	0.00	1.00	0.00	0.50	1.67	0.00	0.00	0.33	0.00	0.00	4.00
Germany	67.00	3.48	3.01	4.33	0.00	5.17	33.22	1.00	1.50	0.00	2.00	0.33	0.57	1.00	1.00	0.00	0.00	1.00	0.67	0.50	1.33	0.00	0.00	0.00	1.00	0.00	5.89
Sweden	50.00	9.50	4.00	0.00	0.00	0.00	1.00	26.67	1.33	0.00	0.00	0.50	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	4.00
Italy	41.00	0.83	3.17	1.00	1.00	4.92	1.50	1.33	12.67	0.25	1.00	2.50	1.00	0.00	1.00	1.00	2.00	1.00	0.00	0.00	0.00	0.00	0.00	0.83	0.00	0.00	4.00
Turkey	37.00	0.00	4.50	1.50	2.33	0.25	0.00	0.00	0.25	24.67	0.00	0.50	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
Austria	33.00	0.00	0.00	0.00	0.00	1.00	2.00	0.00	1.00	0.00	29.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
United Kingdom	30.00	3.00	0.83	0.00	2.67	1.00	0.33	0.50	2.50	0.50	0.00	9.00	1.50	0.00	0.00	0.00	0.50	0.00	1.17	0.00	1.00	0.00	0.00	0.50	0.00	1.50	3.50
Ireland	29.00	6.07	5.98	3.50	0.00	0.50	0.57	0.00	1.00	2.00	0.00	1.50	6.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.50
Poland	25.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	17.00	0.00	0.00	0.00	0.00	0.00	0.00	4.00	0.00	0.00	0.00	0.00	0.00	2.00
Czech Republic	22.00	2.50	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	13.00	0.00	0.00	3.00	0.00	1.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Chile	22.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	13.20	0.00	1.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.60
Belgium	21.00	4.33	2.53	1.00	0.00	0.00	0.00	2.00	2.00	0.00	0.00	0.50	0.00	0.00	0.00	0.00	5.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.60
Spain	20.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	3.00	1.20	0.00	9.40	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.40
Brazil	19.00	1.50	1.50	0.00	0.00	0.00	0.67	0.00	0.00	0.00	0.00	1.17	0.00	0.00	0.00	0.00	0.00	1.00	12.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50
Iran	17.00	0.50	3.50	3.00	0.00	0.50	0.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.50	0.00	0.00	0.00	0.00	7.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50
Denmark	15.00	1.00	4.00	0.00	0.00	1.67	1.33	0.00	0.00	0.00	0.00	1.00	0.00	4.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00
Taiwan	15.00	0.50	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.00	0.00	0.50	0.00	0.00	5.00
Singapore	13.00	0.00	0.00	0.00	5.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.67	0.00	0.00	0.00	2.50
Norway	13.00	2.58	0.00	0.00	0.00	0.33	0.00	1.00	0.83	0.00	0.00	0.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.00	4.00	0.00	0.25	3.00
South Korea	12.00	0.00	3.67	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	4.00	0.00	2.33
Greece	12.00	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.00	9.00	1.00
Argentina	12.00	0.00	0.44	0.00	0.00	0.00	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.33
Cameroon	12.00	0.00	0.00	1.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.00
Tunisia	11.00	3.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.00
Hungary	10.00	1.50	0.00	2.50	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.00
Netherlands	10.00	1.00	2.29	0.00	1.00	2.00	0.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.67
Switzerland	7.00	0.00	0.00	0.00	0.00	0.00	1.00	2.00	4.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pakistan	7.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.00	5.50
Japan	7.00	0.00	0.50	0.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.00
Mexico	6.00	0.00	1.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hong Kong	6.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	2.00	0.00	0.00	0.00	0.00
Luxembourg	5.00	0.50	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.00	0.00	0.00	0.00	3.00	0.00	0.00	0.00
Colombia	4.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.60	0.00	1.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Indonesia	4.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.00	0.00	0.00	0.00	0.00	0.00
Egypt	4.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.00
Portugal	4.00	0.00	0.44	0.00	0.00	0.00	0.22	0.00	0.00	0.00	0.00	0.50	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.83
Other		2.00	2.17	0.00	1.50	1.00	3.00	0.00	0.00	0.00	0.00	1.00	0.50	2.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.50	0.00	1.83	1.00	

Table 10: Heat Map based on Collaboration between Countries (Integer Count)

From/To	Total	United States	France	Germany	Canada	Italy	Australia	United Kingdom	Sweden	Belgium	Denmark	Turkey	Norway	Spain	Netherlands	Poland	Switzerland	China	Hong Kong	Ireland	Austria	Finland	Macao	Cyprus	Peru	Iran	Other
Total	120.00	104.00	68.00	64.00	58.00	57.00	51.00	47.00	37.00	36.00	36.00	36.00	34.00	34.00	30.00	28.00	28.00	27.00	26.00	25.00	23.00	22.00	21.00	21.00	13.00		
United States	120.00	0.00	16.00	7.00	13.00	5.00	5.00	3.00	6.00	3.00	5.00	6.00	1.00	1.00	5.00	1.00	1.00	7.00	2.00	6.00	1.00	2.00	1.00	1.00	1.00	4.00	17.00
France	104.00	16.00	0.00	6.00	7.00	3.00	3.00	5.00	12.00	5.00	2.00	1.00	6.00	1.00	2.00	2.00	1.00	2.00	1.00	7.00	1.00	1.00	1.00	1.00	1.00	1.00	16.00
Germany	68.00	7.00	6.00	0.00	6.00	3.00	8.00	2.00	2.00	1.00	3.00	1.00	1.00	2.00	2.00	2.00	2.00	0.00	1.00	1.00	3.00	1.00	1.00	1.00	1.00	1.00	10.00
Canada	64.00	13.00	7.00	6.00	0.00	2.00	2.00	1.00	1.00	2.00	1.00	3.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00	4.00	1.00	1.00	1.00	1.00	1.00	3.00	6.00
Italy	58.00	5.00	3.00	3.00	2.00	0.00	8.00	4.00	2.00	3.00	1.00	2.00	3.00	3.00	1.00	1.00	5.00	1.00	1.00	1.00	2.00	1.00	1.00	1.00	1.00	0.00	3.00
Australia	57.00	5.00	3.00	8.00	2.00	8.00	0.00	3.00	1.00	1.00	3.00	2.00	2.00	2.00	3.00	1.00	1.00	2.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
United Kingdom	51.00	3.00	5.00	2.00	1.00	4.00	3.00	0.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	3.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00	0.00	8.00
Sweden	47.00	6.00	12.00	2.00	1.00	2.00	1.00	2.00	0.00	3.00	1.00	1.00	2.00	1.00	1.00	1.00	3.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	2.00
Belgium	37.00	3.00	5.00	1.00	2.00	3.00	1.00	2.00	3.00	0.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	3.00
Denmark	36.00	5.00	2.00	3.00	1.00	1.00	3.00	2.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	5.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Turkey	36.00	6.00	1.00	1.00	3.00	2.00	2.00	2.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Norway	36.00	1.00	6.00	1.00	1.00	3.00	2.00	2.00	2.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	5.00
Spain	34.00	1.00	1.00	2.00	2.00	3.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	8.00
Netherlands	34.00	5.00	2.00	2.00	1.00	1.00	3.00	1.00	1.00	2.00	1.00	1.00	1.00	1.00	0.00	2.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	2.00
Poland	30.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	5.00	1.00	1.00	1.00	2.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	2.00
Switzerland	28.00	1.00	1.00	2.00	1.00	5.00	1.00	1.00	3.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00
China	28.00	7.00	2.00	0.00	1.00	1.00	1.00	3.00	0.00	0.00	0.00	2.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	8.00
Hong Kong	27.00	2.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	3.00
Ireland	26.00	6.00	7.00	1.00	4.00	1.00	1.00	2.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00
Austria	25.00	1.00	1.00	3.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00
Finland	23.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00
Macao	22.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Cyprus	21.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00
Peru	21.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00
Iran	13.00	4.00	1.00	1.00	3.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.00
Czech Republic	12.00	0.00	3.00	1.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00
South Korea	10.00	4.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.00
Chile	9.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.00
Brazil	9.00	2.00	2.00	1.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
Singapore	9.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
Taiwan	8.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.00
Hungary	7.00	0.00	2.00	1.00	3.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Portugal	7.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00
Mexico	7.00	2.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	2.00
Luxembourg	6.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
Tunisia	6.00	0.00	3.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00
Argentina	5.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00
United Arab Emirates	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.00
Pakistan	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.00
Greece	5.00	0.00	1.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
Other		4.00	2.00	4.00	3.00	0.00	1.00	1.00	2.00	2.00	0.00	0.00	0.00	2.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

5 Conference Papers by Most Common Conference Series




Conference Paper Count by Conference Series (Count > 1)
Paper Count
Conference Series
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20
40
60
80
100
120
140
160
148
108
54
29
23
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CP
CPAIOR
AAAI
IJCAI
ICAPS
ECAI
ICTAI
ICAART
CSCLP
PATAT
INAP
ETFA
Automation
ICRA
KR
GECCO
ACT
ILPS
Operations Research Proceedings
ICROMA
PSE
ICMLC
ICNSC
ICNC
GOR
IPDPS
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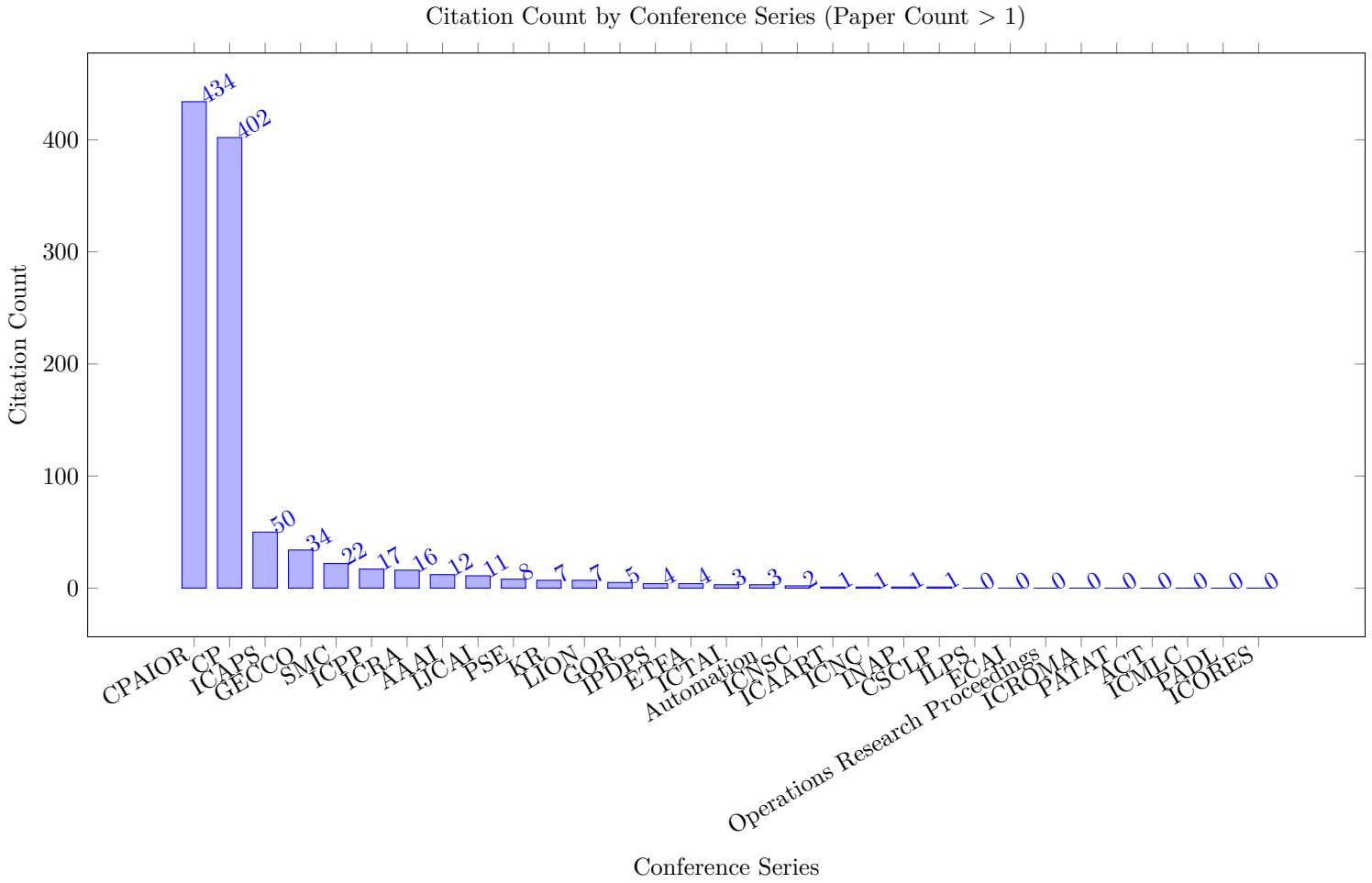
ICORES
LION
SMC
ICPP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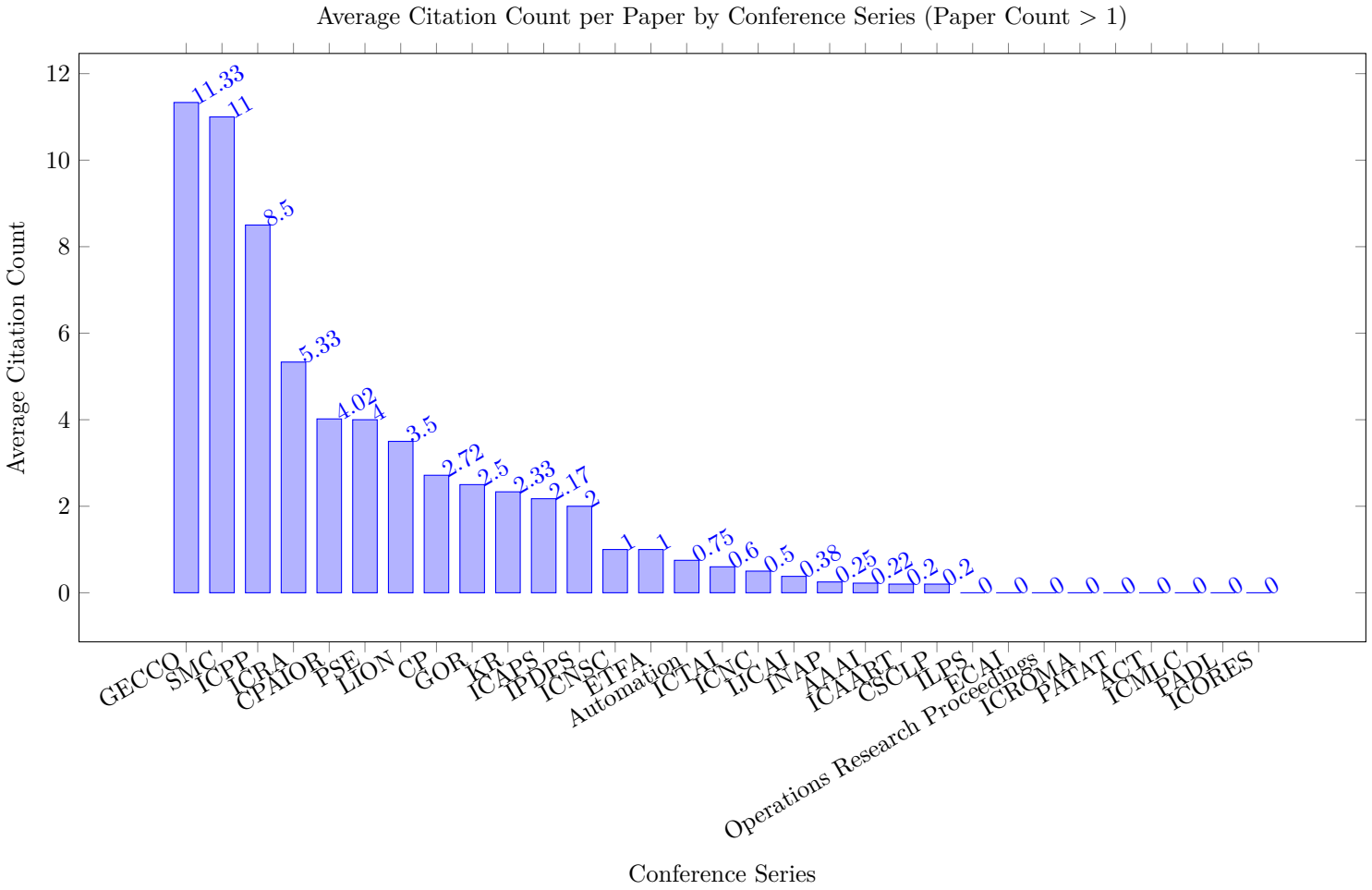
Conference Series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4.02
4
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2.5
2.33
2.17
2
1
1
0.75
0.6
0.5
0.38
0.25
0.22
0.2
0.2
0
0
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0
0
0
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0
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ICPP
ICRA
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PSE
LION
CP
GOR
KR
ICAPS
IPDPS
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IJCAI
INAP
AAAI
ICAART
CSCLP
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Operations Research Proceedings
ICROMA
PATAT
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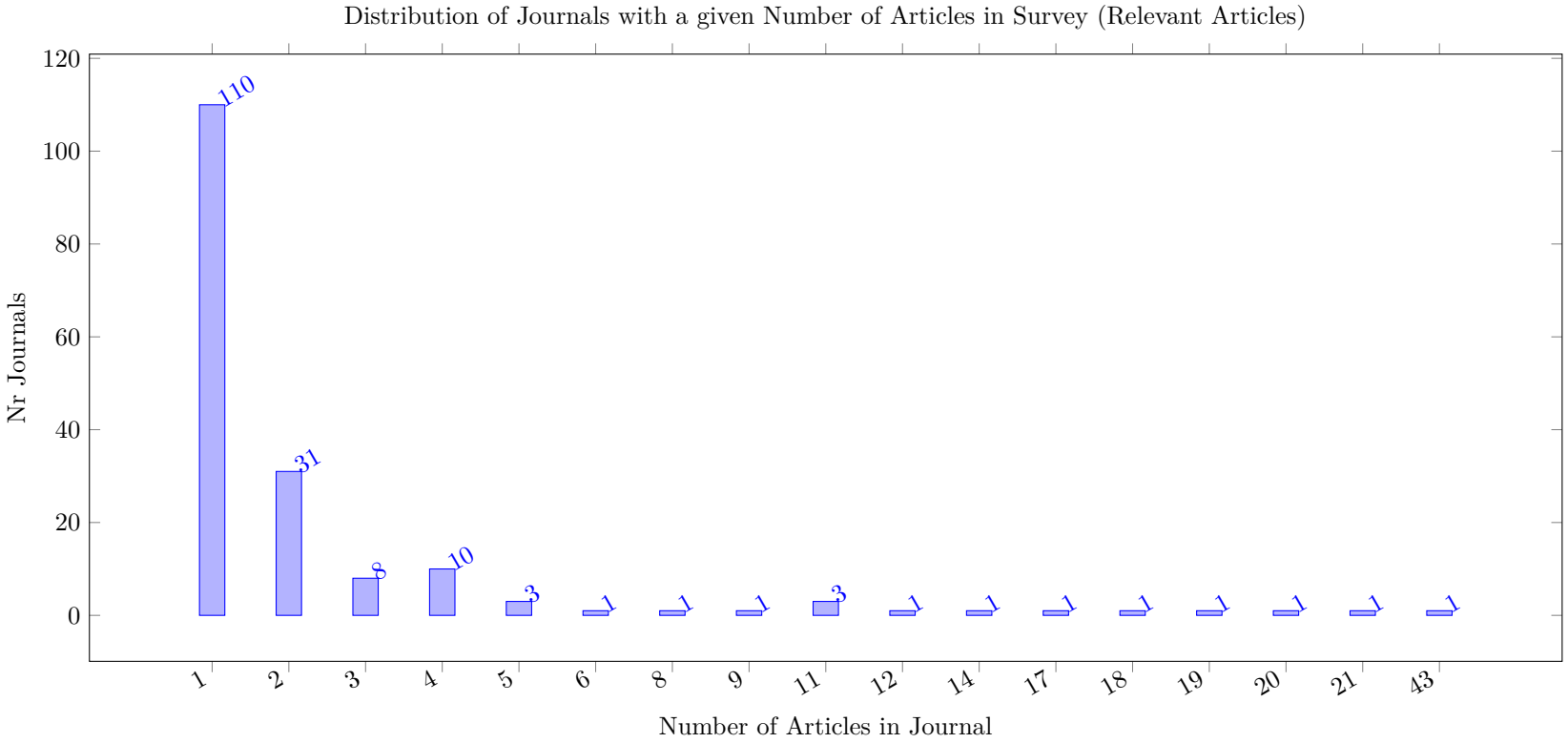
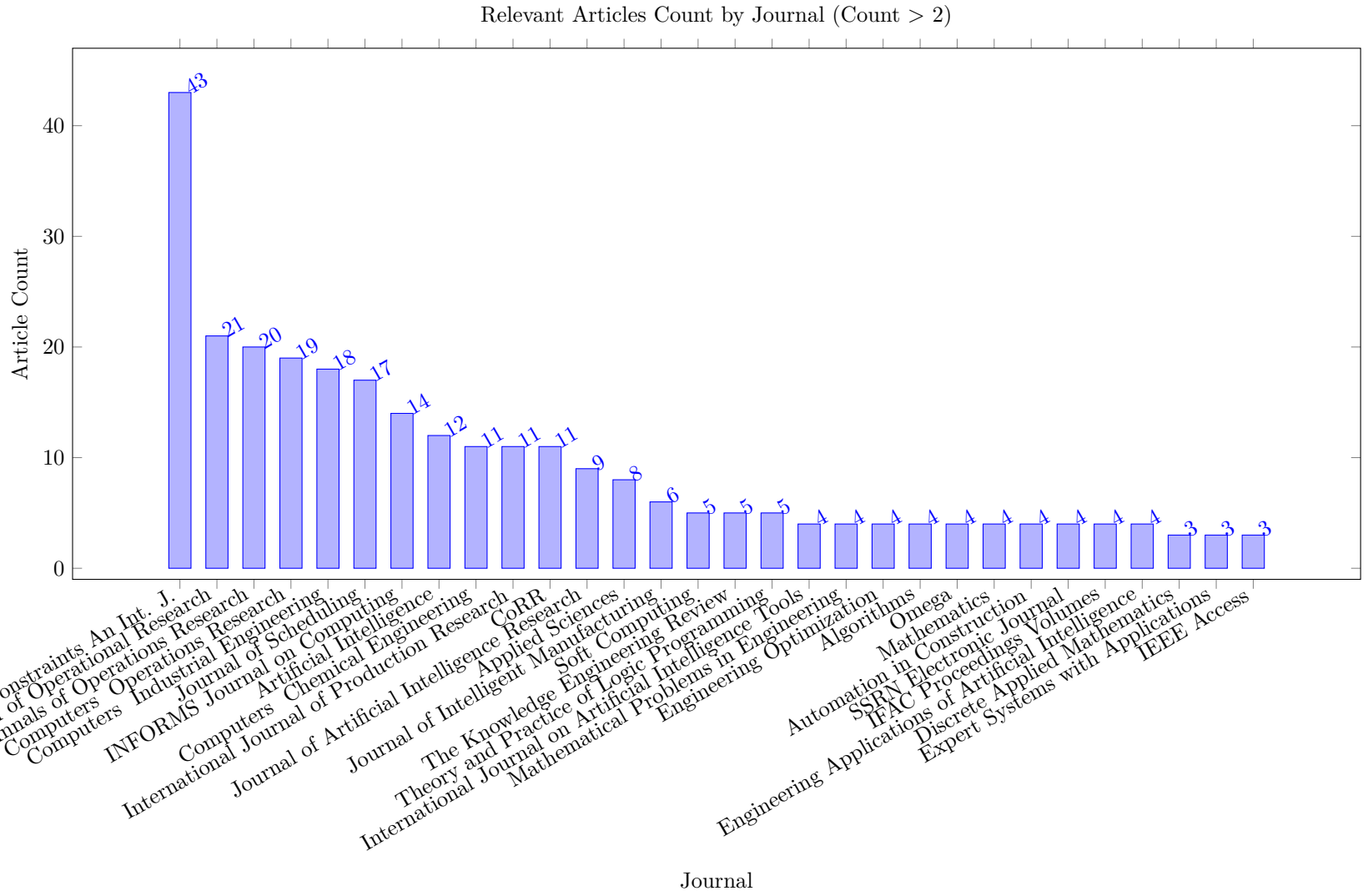
ICMLC
PADL
ICORES

6 Journal Articles by Most Common Journals

6.1 Relevant Articles

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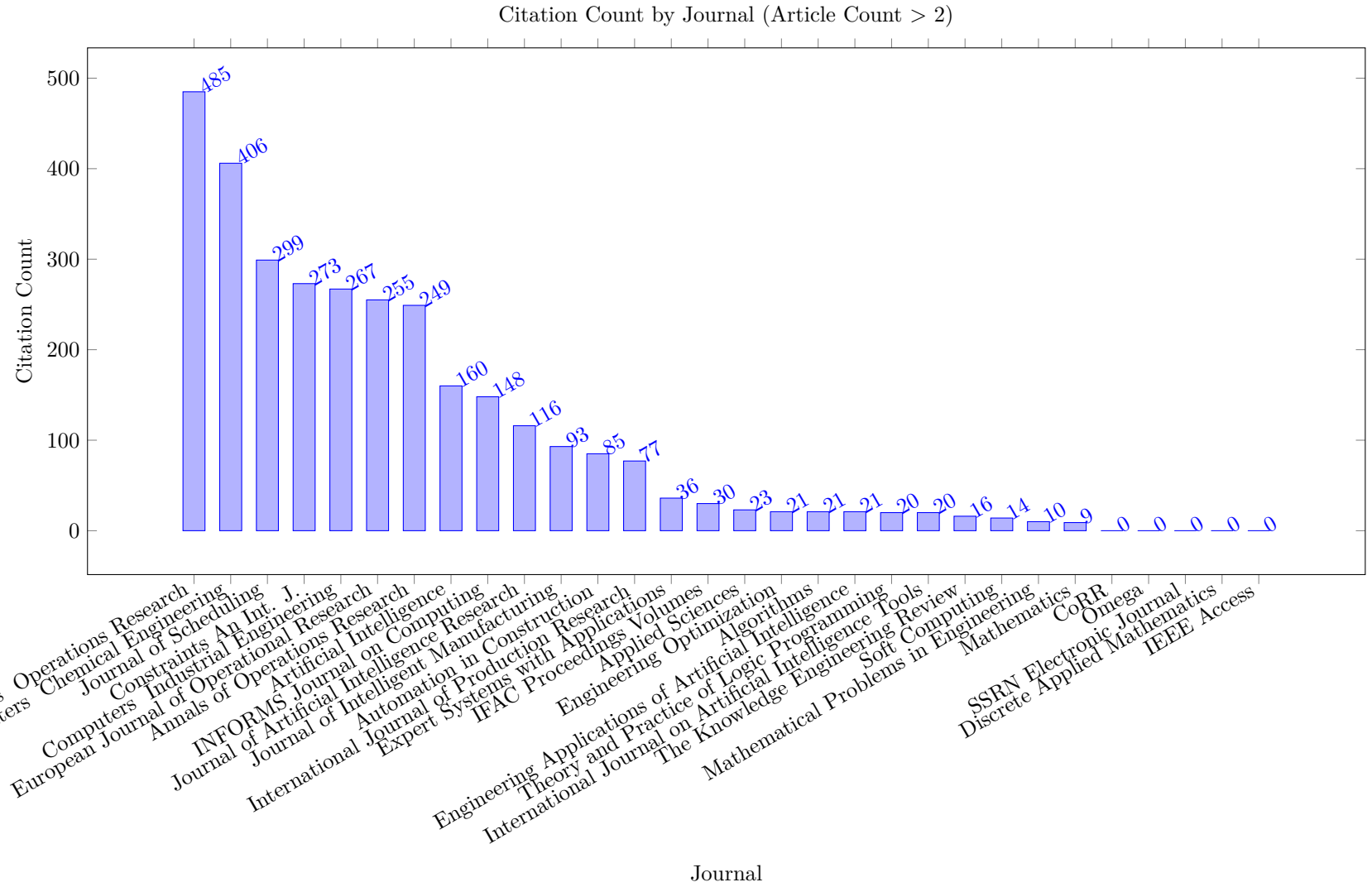
4
4
3
3
3
Constraints An Int. J.
European Journal of Operational Research
Annals of Operations Research
Computers Operations Research
Industrial Engineering
Computers
Journal of Scheduling
Journal on Computing
Artificial Intelligence
Chemical Engineering
INFORMS Journal on Computing
International Journal of Production Research
CoRR
Applied Sciences
Computers Chemical Engineering
Journal of Intelligent Manufacturing
Journal of Artificial Intelligence Research
Soft Computing
The Knowledge Engineering Review
Theory and Practice of Logic Programming
International Journal on Artificial Intelligence Tools
Mathematical Problems in Engineering
Engineering Optimization
Algorithms
Omega
Mathematics
Automation in Construction
SSRN Electronic Journal
IFAC Proceedings Volumes
Engineering Applications of Artificial Intelligence
Discrete Applied Mathematics
Expert Systems with Applications
IEEE Access
Journal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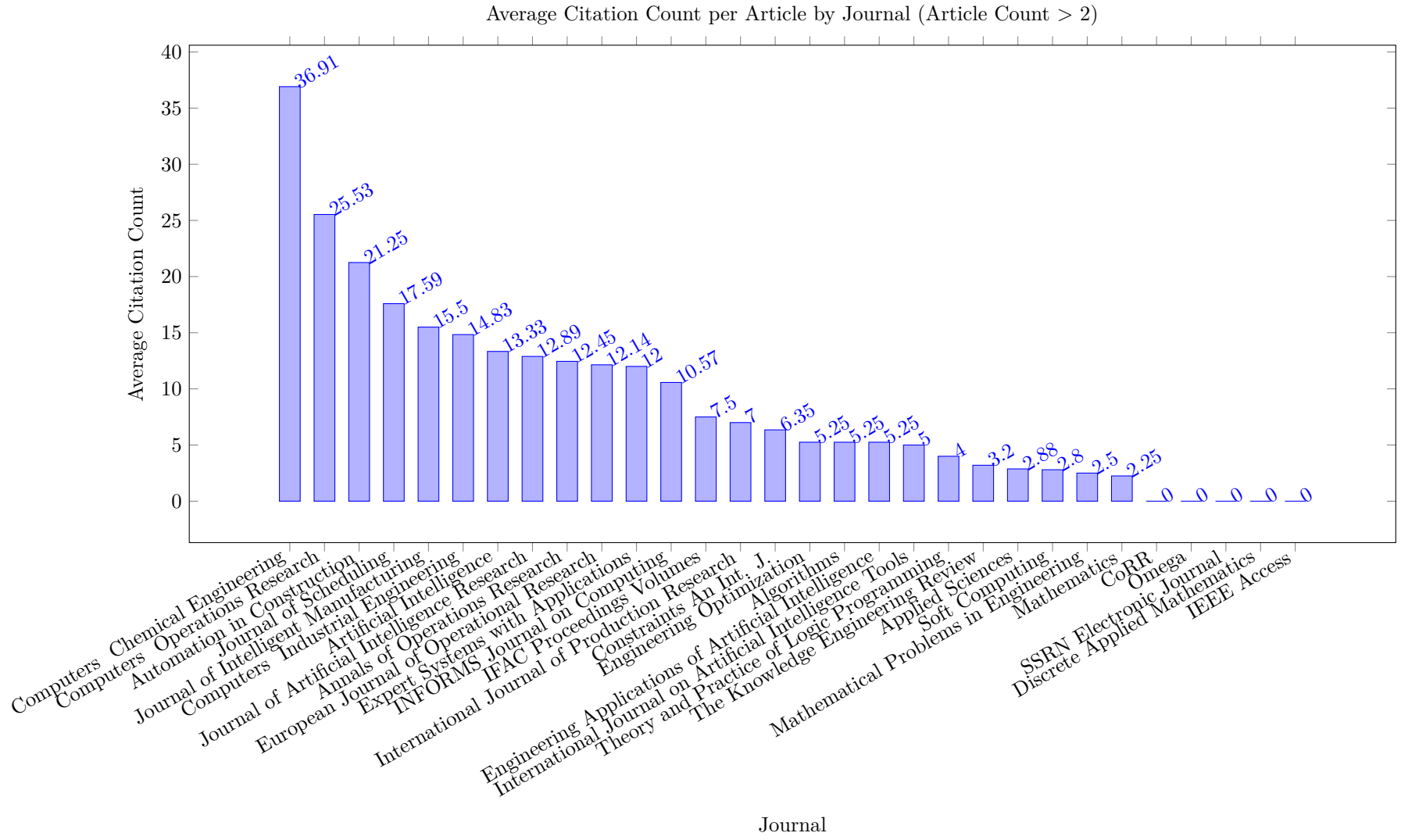
Computers Operations Research
Chemical Engineering Computers
Journal of Scheduling
Constraints An Int. J.
Industrial Engineering Computers
European Journal of Operational Research
Annals of Operations Research
Artificial Intelligence
INFORMS Journal on Computing
Journal of Artificial Intelligence Research
Journal of Intelligent Manufacturing
Automation in Construction
International Journal of Production Research
Expert Systems with Applications
IFAC Proceedings Volumes
Applied Sciences
Engineering Optimization
Algorithms
Engineering Applications of Artificial Intelligence
Theory and Practice of Logic Programming
International Journal on Artificial Intelligence Tools
The Knowledge Engineering Review
Mathematical Problems in Engineering
Soft Computing
Mathematics
CoRR
Omega
SSRN Electronic Journal
Discrete Applied Mathematics
IEEE Access
Journal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2.88
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2.25
0
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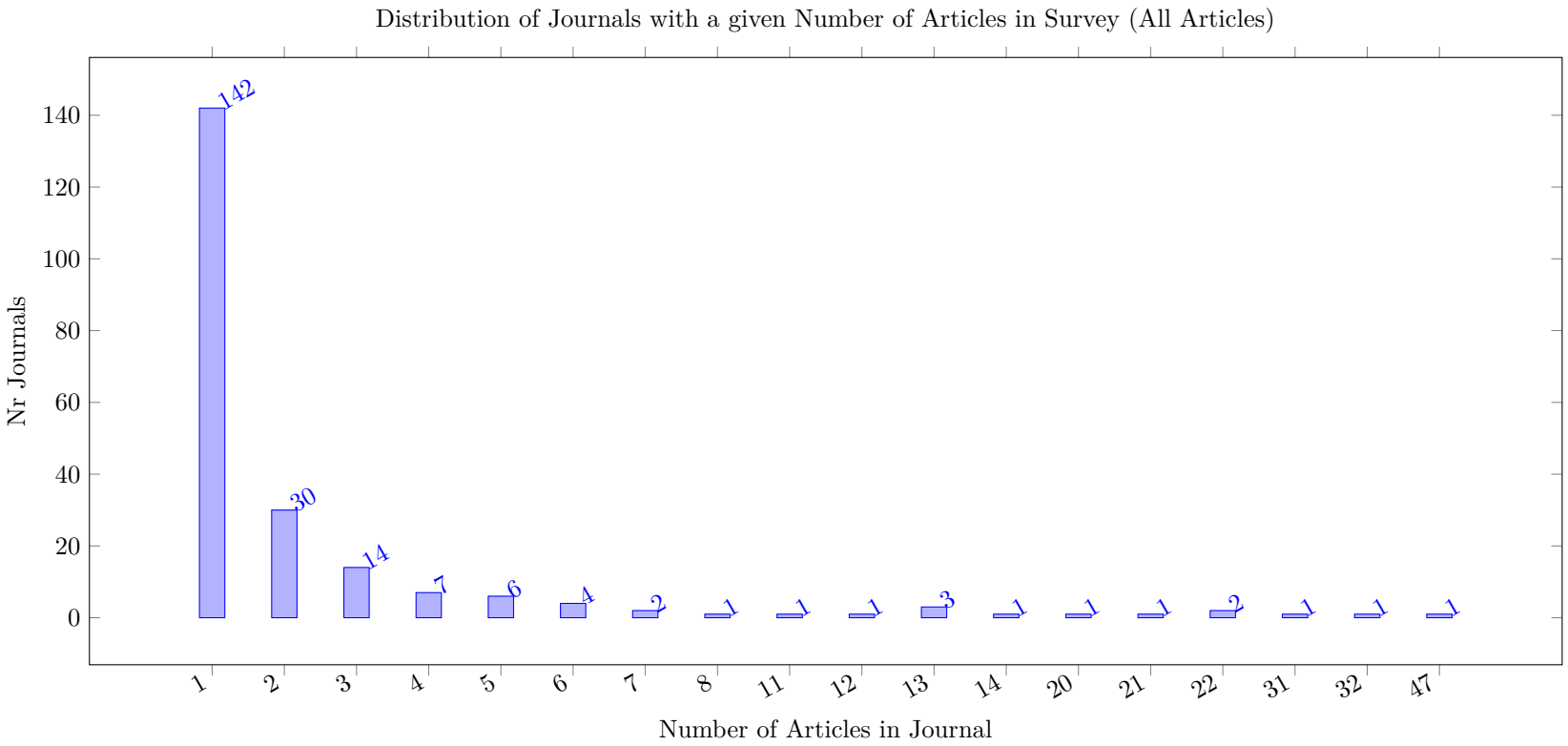
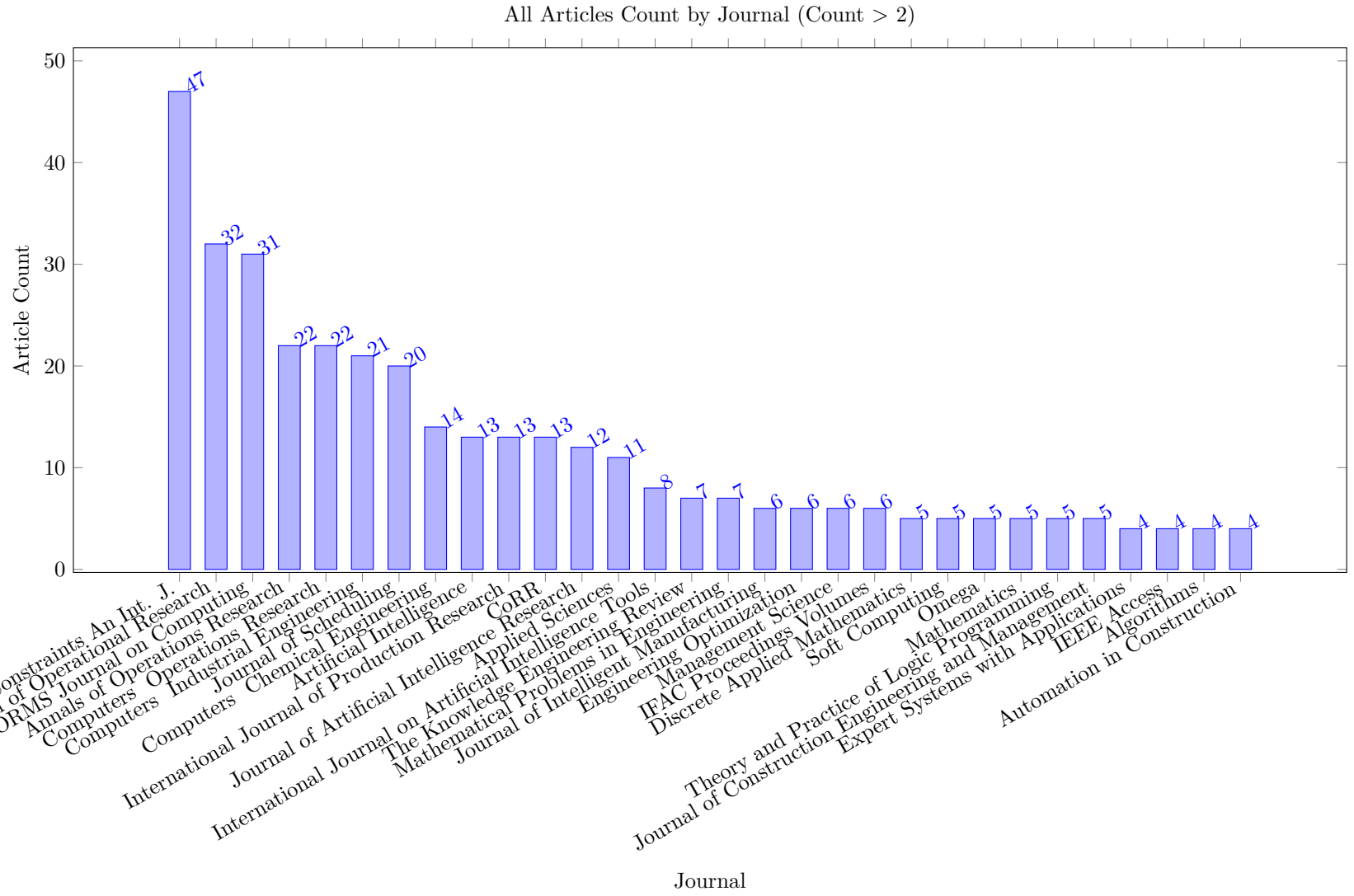
Computers Chemical Engineering
Computers Operations Research
Automation in Construction
Journal of Scheduling
Journal of Intelligent Manufacturing
Computers Industrial Engineering
Artificial Intelligence
Journal of Artificial Intelligence Research
Annals of Operations Research
European Journal of Operational Research
Expert Systems with Applications
INFORMS Journal on Computing
IFAC Proceedings Volumes
International Journal of Production Research
Constraints An Int. J.
Engineering Optimization
Algorithms
Engineering Applications of Artificial Intelligence
International Journal on Artificial Intelligence Tools
Theory and Practice of Logic Programming
The Knowledge Engineering Review
Applied Sciences
Soft Computing
Mathematical Problems in Engineering
Mathematics
CoRR
Omega
SSRN Electronic Journal
Discrete Applied Mathematics
IEEE Access

6.2 All Articles

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Constraints An Int. J.
European Journal of Operational Research
INFORMS Journal on Computing
Annals of Operations Research
Computers Operations Research
Industrial Engineering
Journal of Scheduling
Computers Chemical Engineering
Artificial Intelligence
International Journal of Production Research
CoRR
Computers Applied Sciences
Journal of Artificial Intelligence Research
International Journal on Artificial Intelligence Tools
The Knowledge Engineering Review
Mathematical Problems in Engineering
Journal of Intelligent Manufacturing
Engineering Optimization
Management Science
IFAC Proceedings Volumes
Discrete Applied Mathematics
Soft Computing
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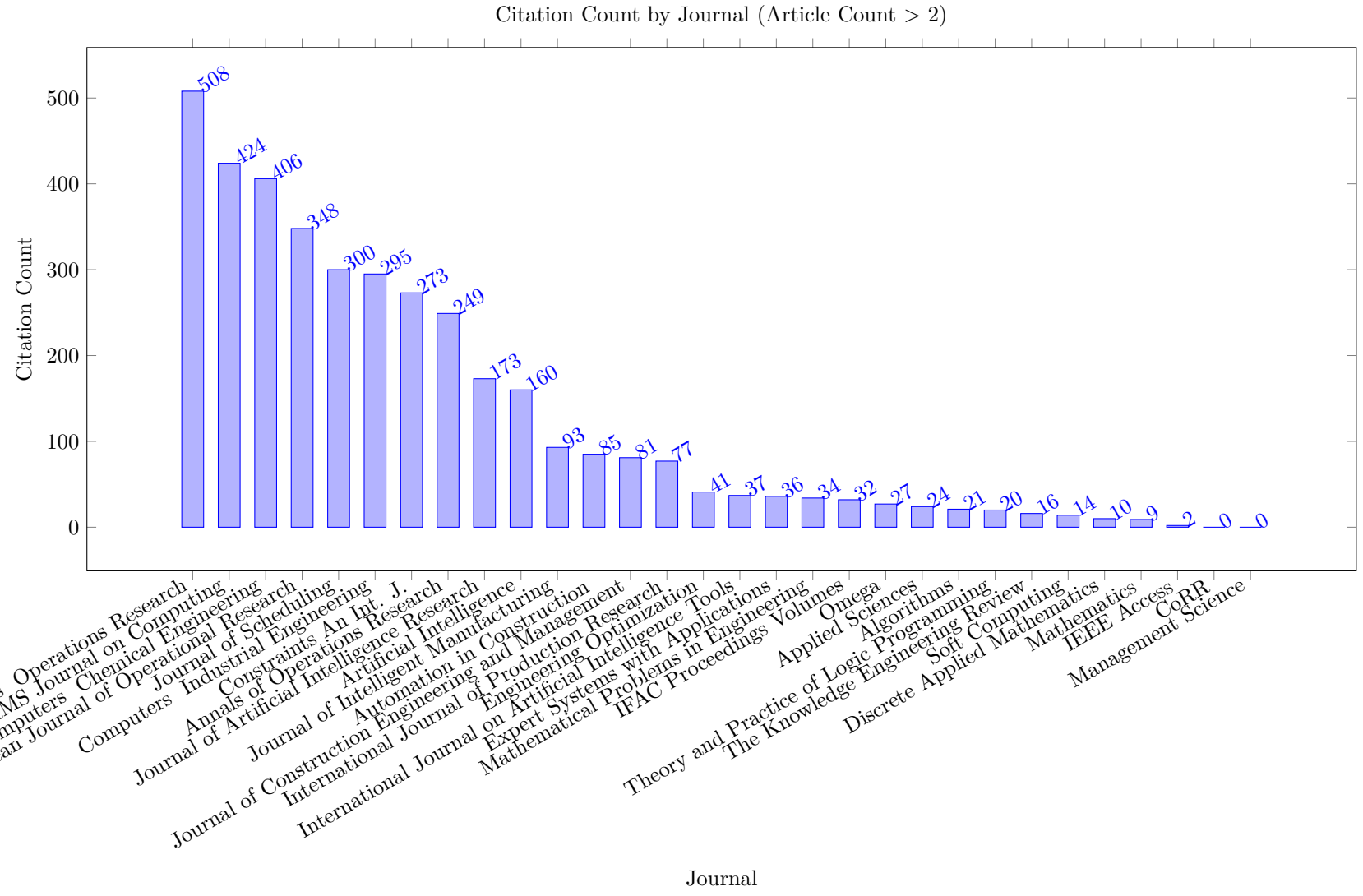
Mathematics
Theory and Practice of Logic Programming
Journal of Construction Engineering and Management
Expert Systems with Applications
IEEE Access
Algorithms
Automation in Construction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Computers Operations Research
INFORMS Journal on Computing
Computers Chemical Engineering
European Journal of Operational Research
Journal of Scheduling
Industrial Engineering
Constraints An Int. J.
Computers Operations Research
Journal of Artificial Intelligence Research
Annals of Operations Research
Artificial Intelligence
Journal of Intelligent Manufacturing
Automation in Construction
Journal of Construction Engineering and Management
International Journal of Production Research
Engineering Optimization
Expert Systems with Applications
International Journal on Artificial Intelligence Tools
Mathematical Problems in Engineering
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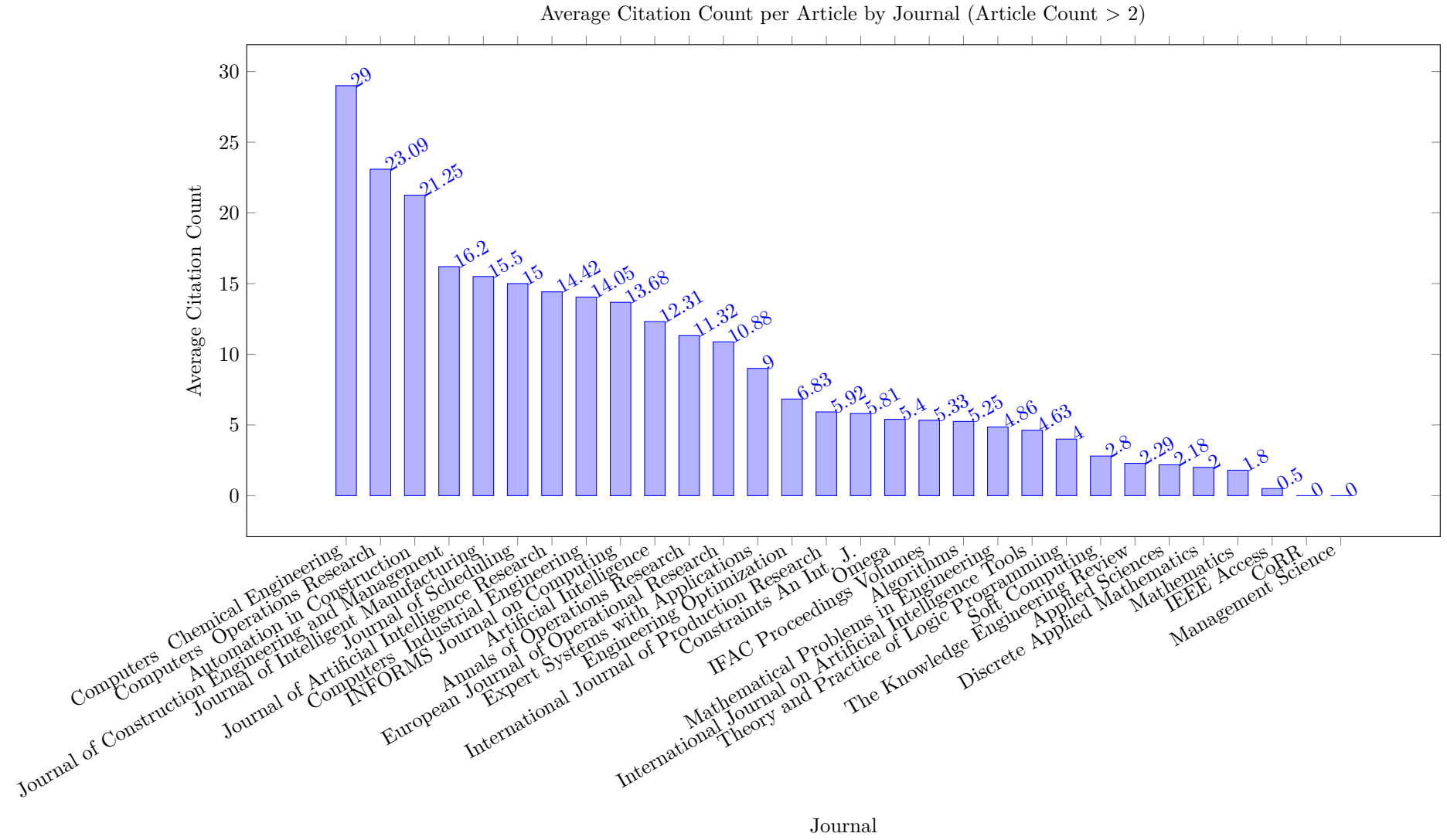
Theory and Practice of Logic Programming
The Knowledge Engineering Review
Soft Computing
Discrete Applied Mathematics
Mathematics
IEEE Access
CoRR
Management Science
Journal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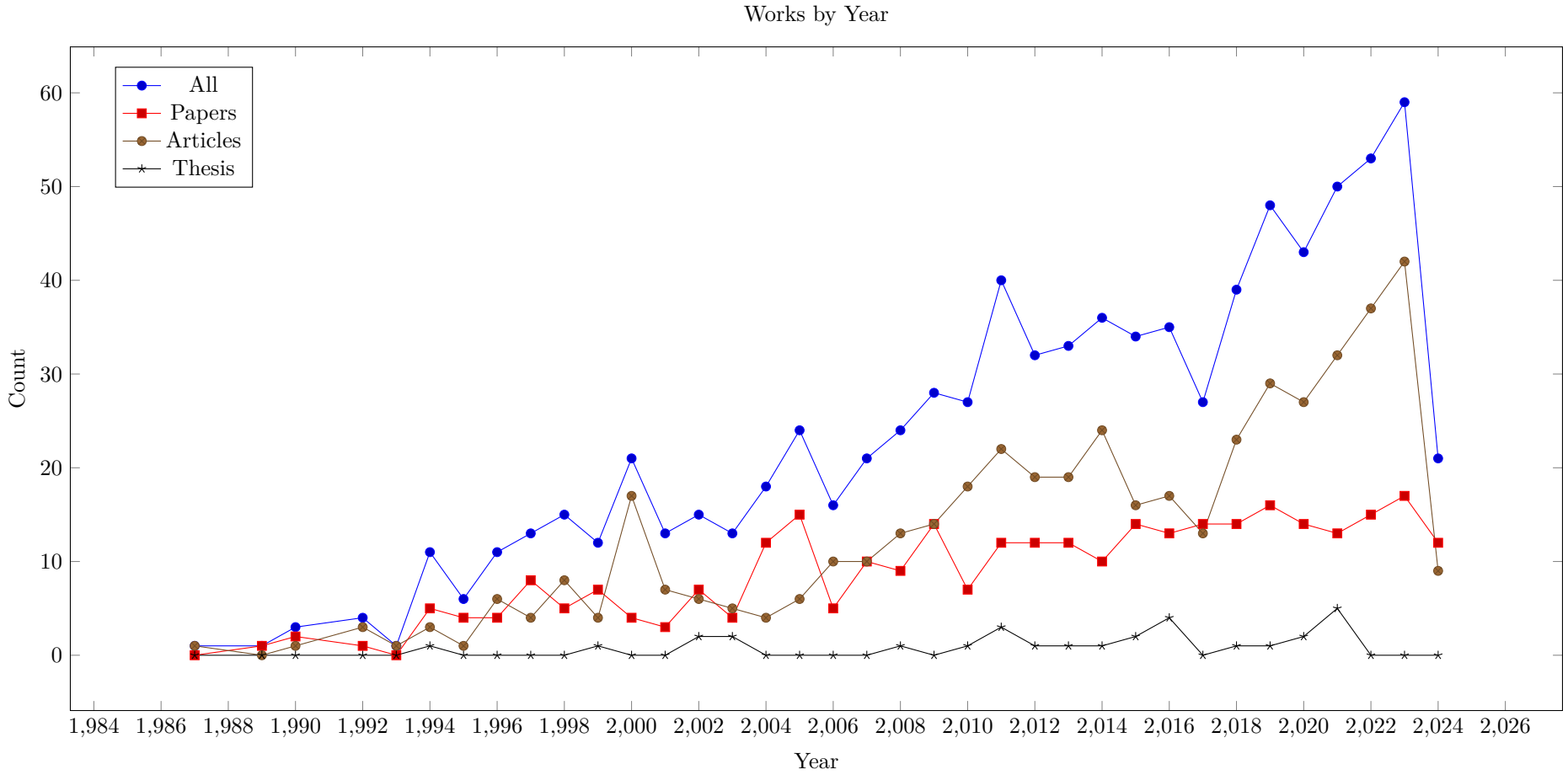
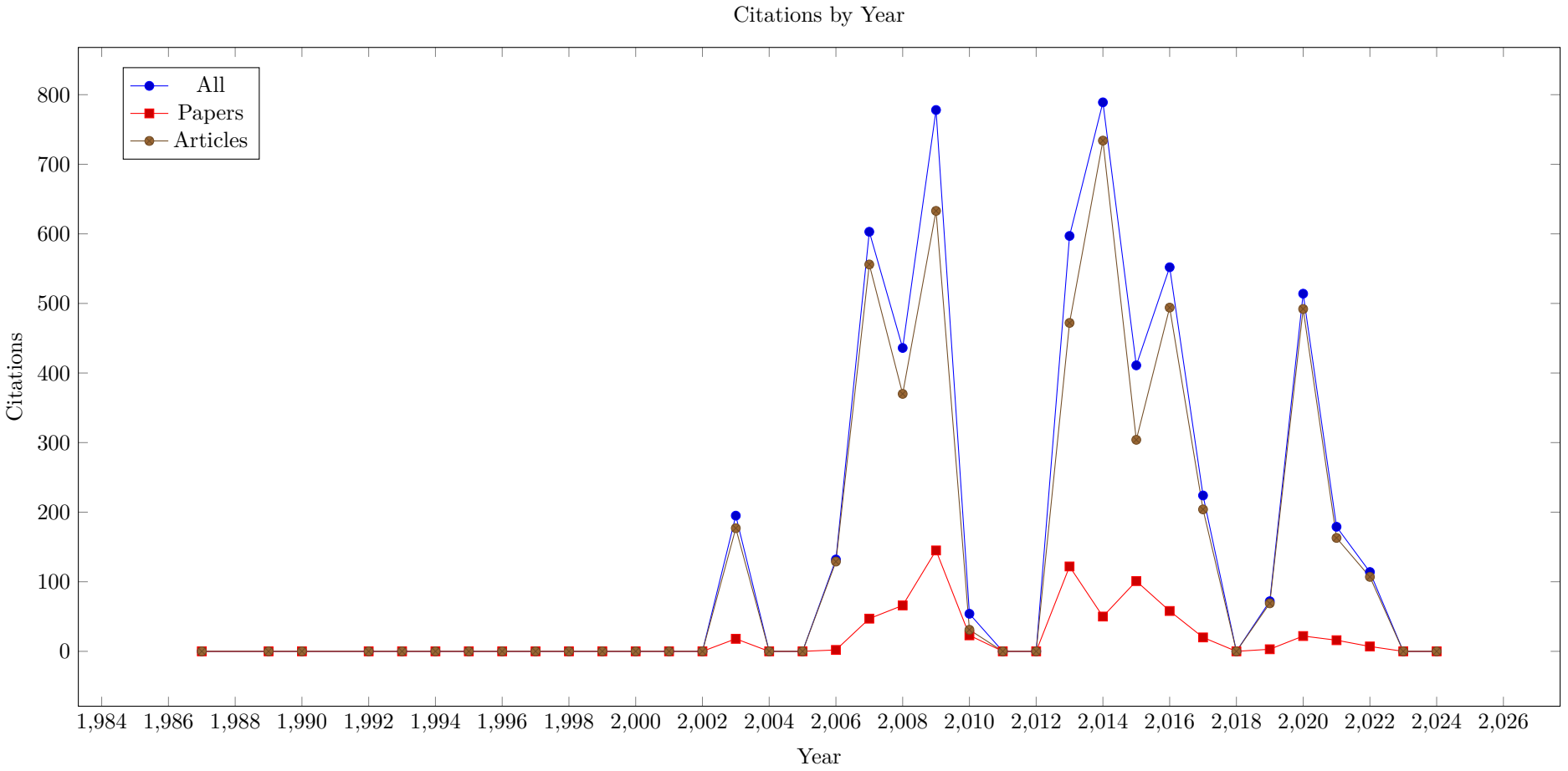
Computers Chemical Engineering
Computers Operations Research
Automation in Construction
Journal of Construction Engineering and Management
Journal of Intelligent Manufacturing
Journal of Scheduling
Journal of Artificial Intelligence Research
Computers Industrial Engineering
INFORMS Journal on Computing
Artificial Intelligence
Annals of Operations Research
European Journal of Operational Research
Expert Systems with Applications
Engineering Optimization
International Journal of Production Research
Constraints An Int. J.
Omega
IFAC Proceedings Volumes
Algorithms
Mathematical Problems in Engineering
International Journal on Artificial Intelligence Tools
Theory and Practice of Logic Programming
Soft Computing
The Knowledge Engineering Review
Applied Sciences
Discrete Applied Mathematics
Mathematics
IEEE Access
CoRR
Management Science

7 Works by Year

7.1 Relevant Works

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Papers
Articles
Citations
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500
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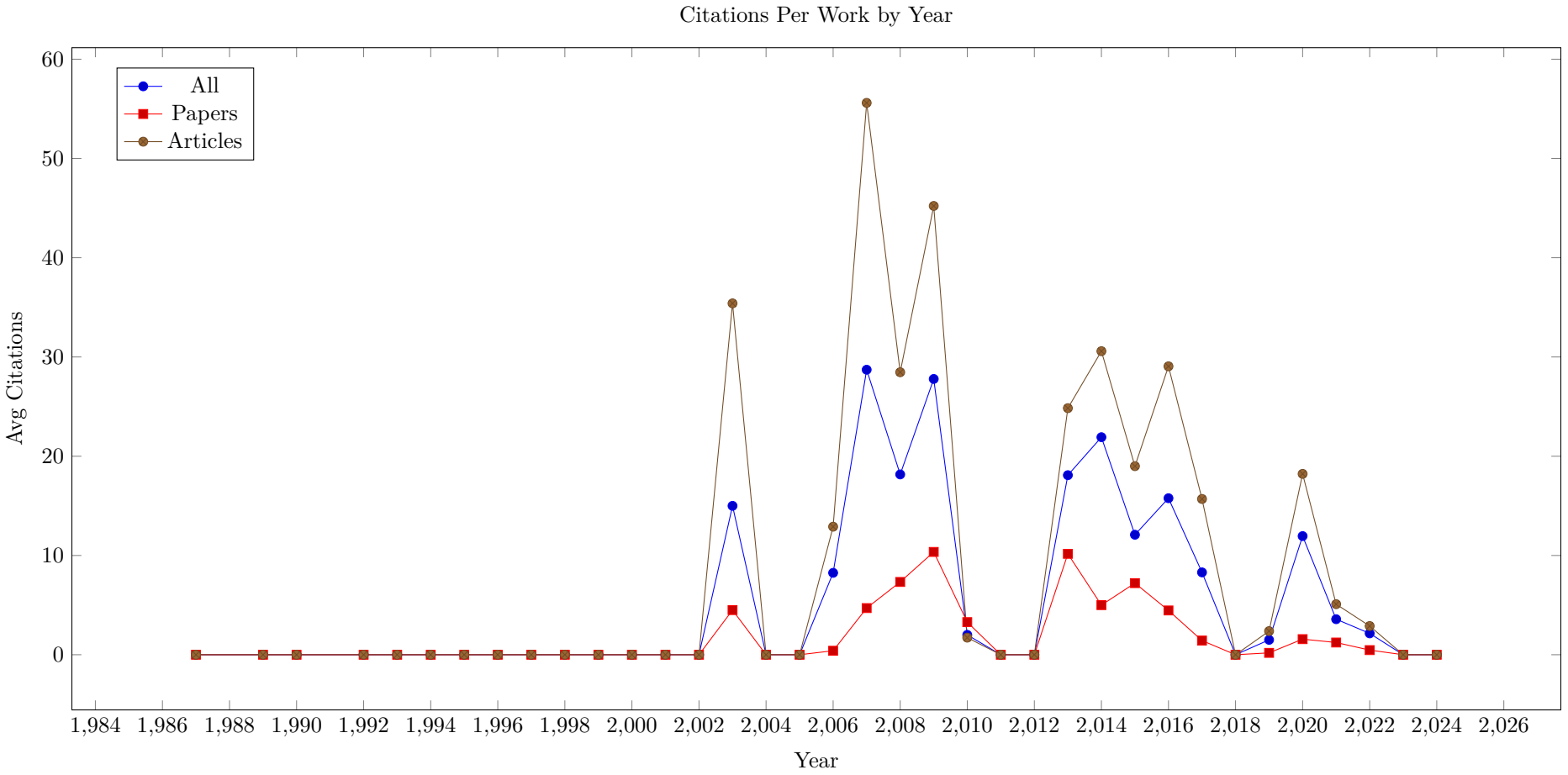
Year


Citations Per Work by Year
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Papers
Articles
Avg Citations
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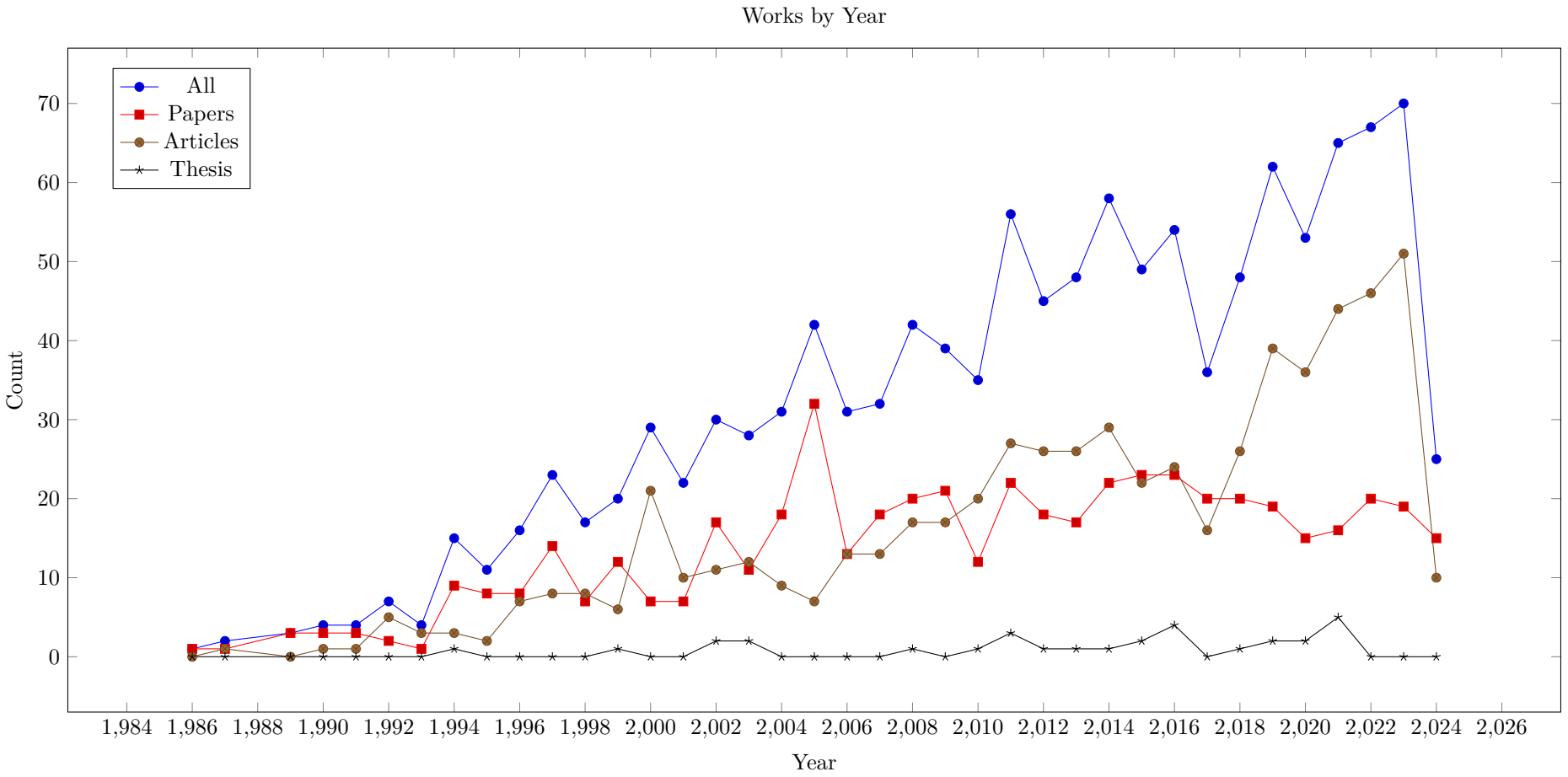
Year

7.2 All Works


Works by Year
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Papers
Articles
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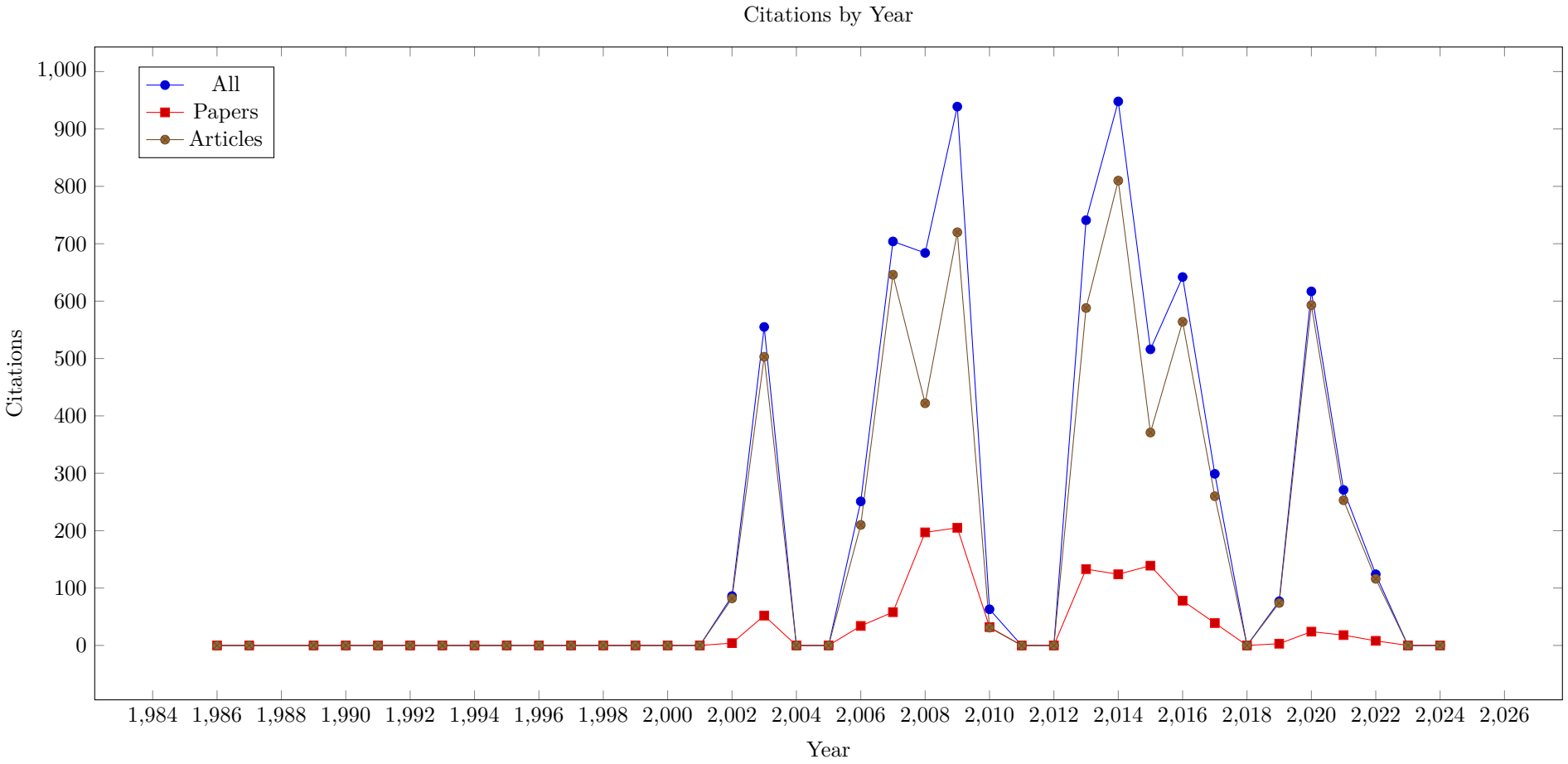
Citations by Year
All
Papers
Articles
Citations
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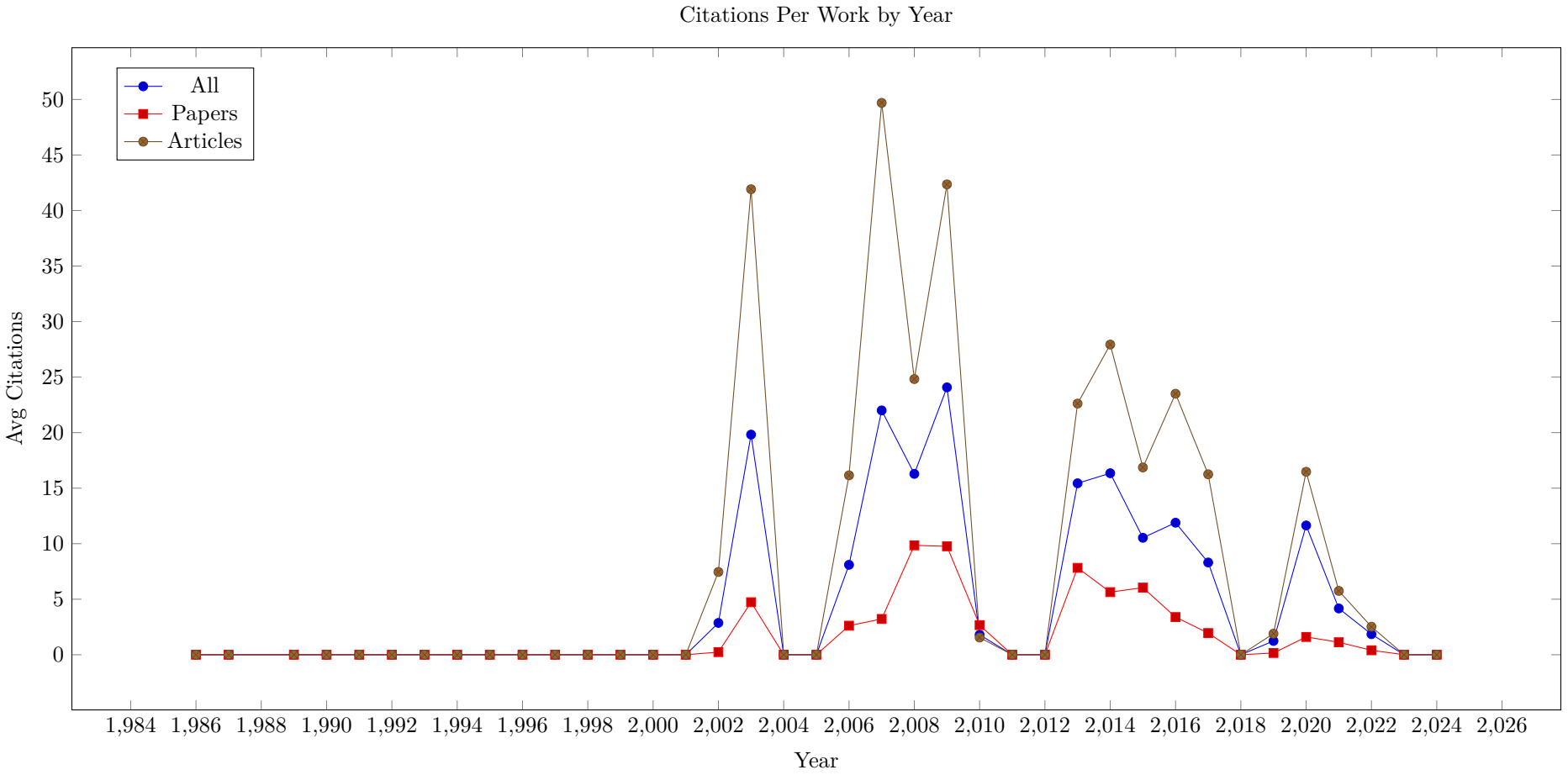
Year


Citations Per Work by Year
All
Papers
Articles
Avg Citations
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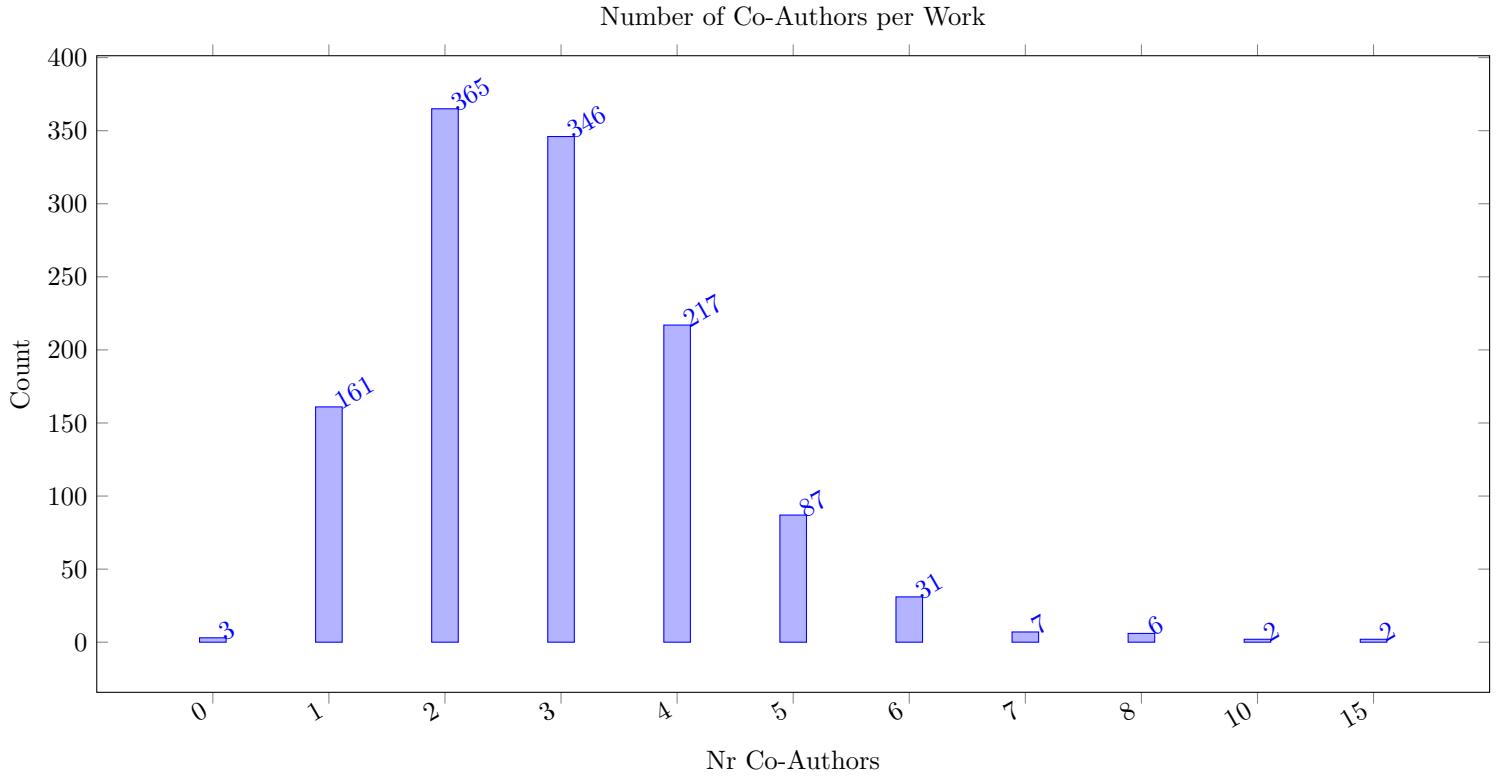
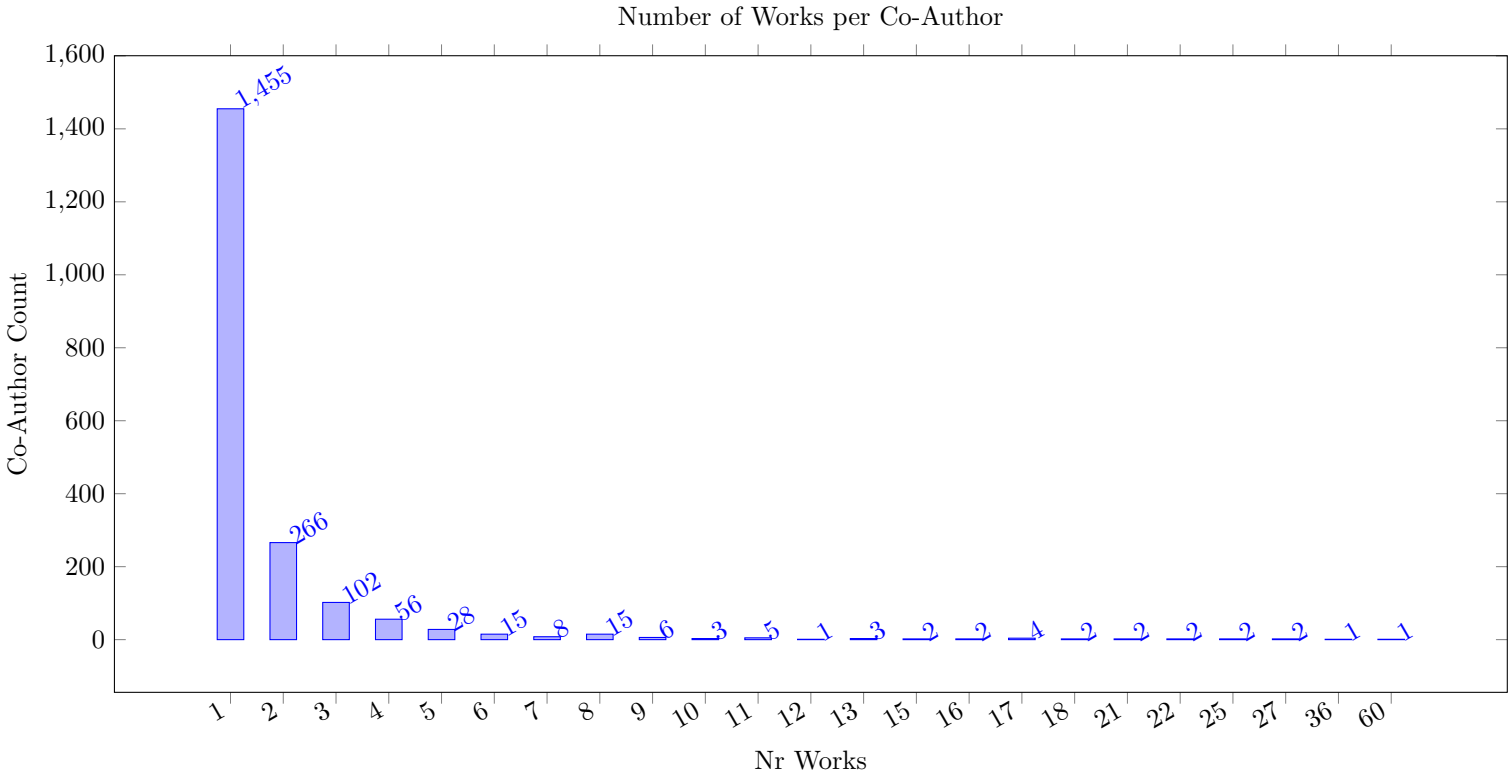
2,026
Year

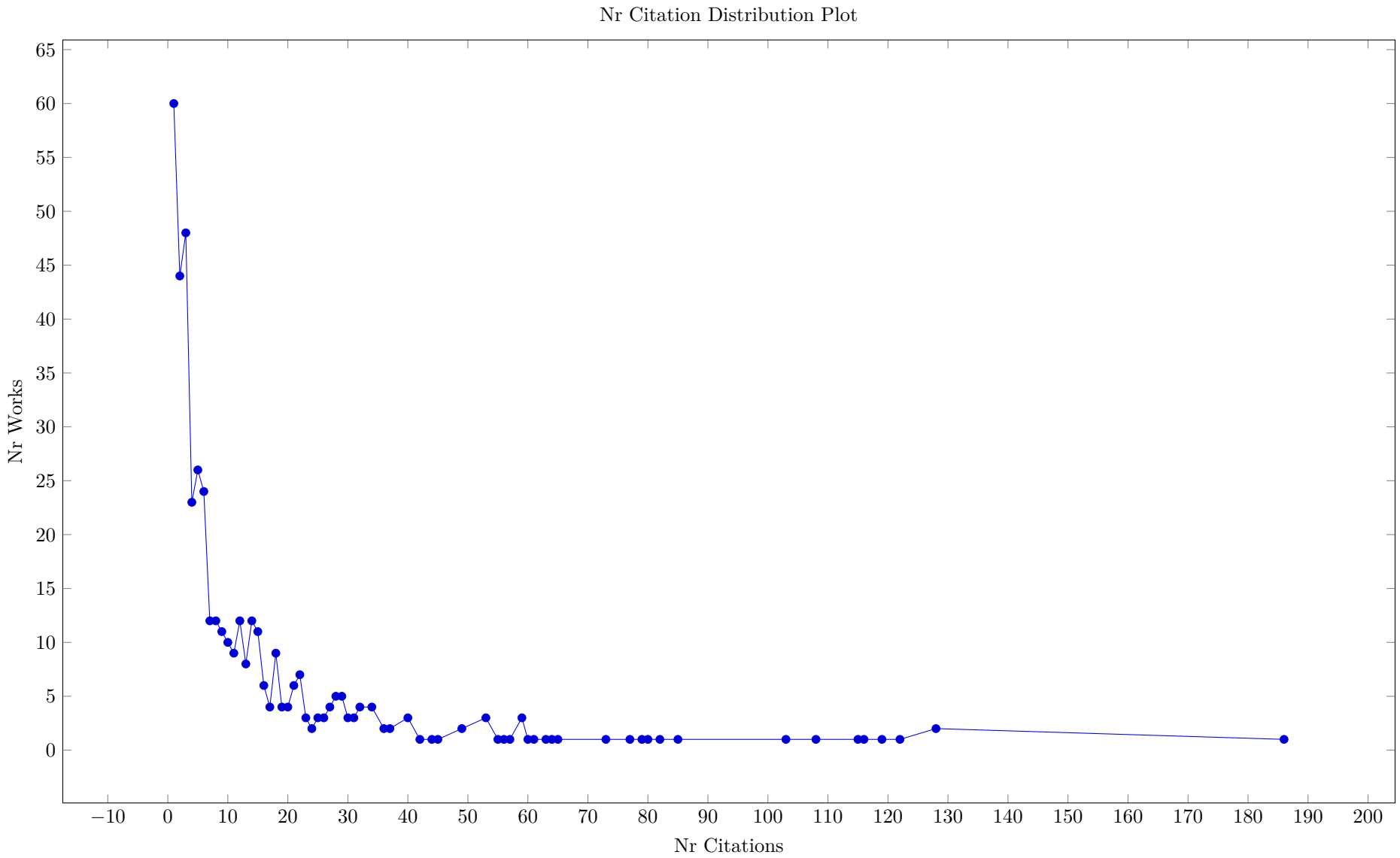
8 Number of Coauthors per Work



9 Number of Works per Author



10 Citation Distribution



11 Similarity Measures

The following distribution plot shows the similarity values between two works based on citations and references counts. If either work does not have citation and reference values, then the similarity is set to NaN. The total similarity count is the average of the similarity for citations and for references. As value we compute the ratio of non-shared references (citations) to the sum of individual references (citations). So both the citation and reference similarity range between zero and one, and the average ranges between zero and one. Low values are very rare, as they require both works to be citing the same papers, and being cited by the same papers. A larger value indicates that items are less similar according to this measure. In the plot we group values into 0.1 wide value bins, so an entry for 0.2 includes values from 0.15 to 0.25.

We observe that low values of this similarity are often found for two works by the same authors that are close in time, where we assumes that the bibliographies in both papers is based on the same literature survey. If neither paper is widely cited, the similarity value is low.

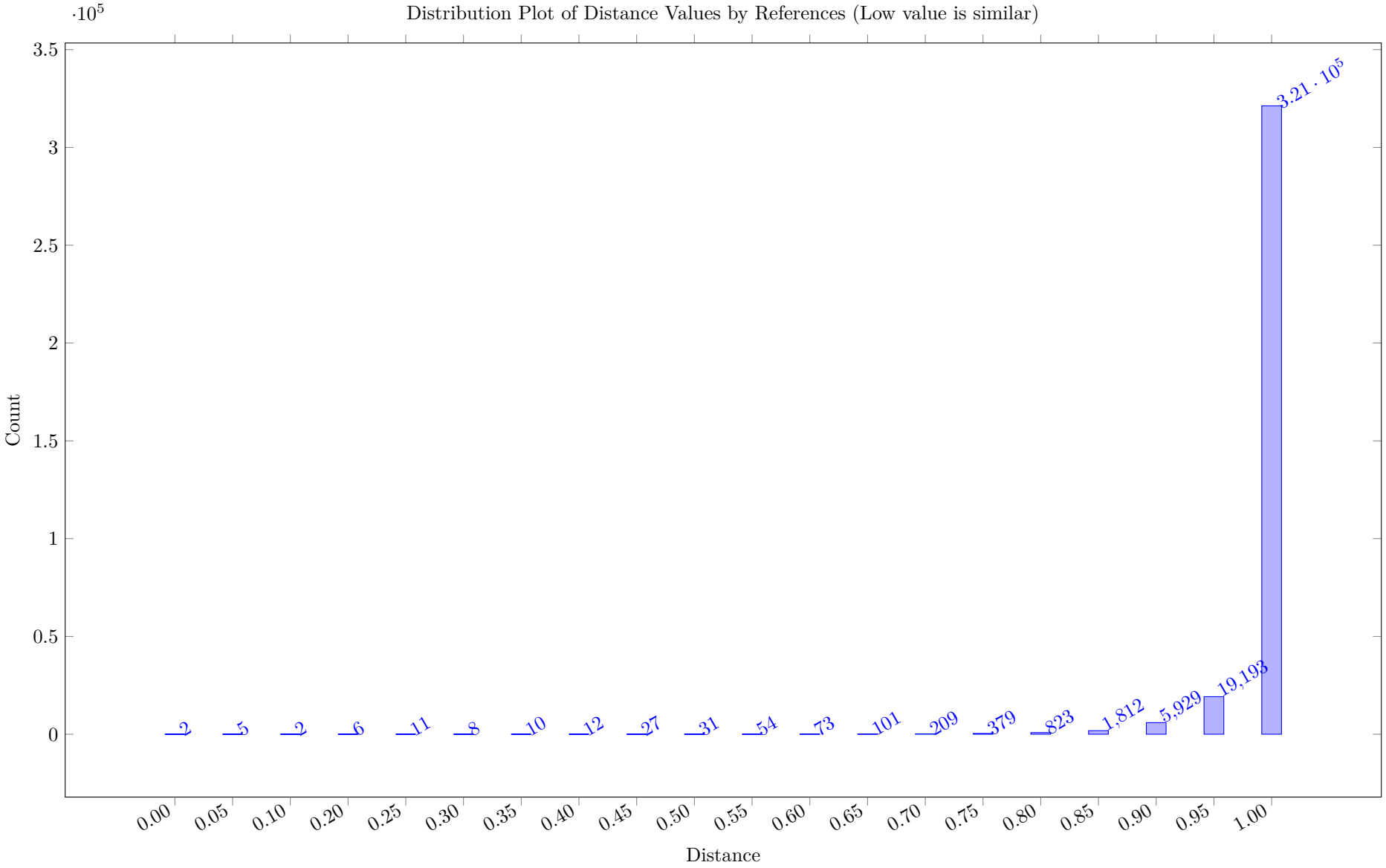
The vast majority of paper pairs has a distance close to one, as their references and citations do not overlap much.

Table 11: Heat Map based on rounded DotProduct Similarity of Concepts (high = similar)

From/To	Total	ZarandiASC20	Tang2020	Ziadlou2024	Schutt11	abs-1902-09244	YunusogluY22	ZhuSZW23	VilimLS15	Siala15a	abs-2211-14492	ZeballosNH11	abs-1911-04766	abs-2402-00459	ZhangBB22	YuraszeckMCCR23	Sciau2024	ZeballosQH10	YuraszeckMPV22	
Total		114707.00	92829.00	88950.00	85861.00	85404.00	85168.00	82788.00	82365.00	81381.00	80874.00	78187.00	77774.00	77191.00	76409.00	75825.00	74881.00	73734.00	73382.00	72241.
Baptiste02	108448.00	330.00	260.00	198.00	266.00	173.00	201.00	169.00	172.00	226.00	161.00	172.00	148.00	135.00	159.00	163.00	185.00	149.00	193.00	137.
Astrand21	107087.00	307.00	259.00	187.00	228.00	174.00	200.00	165.00	162.00	191.00	151.00	143.00	157.00	142.00	153.00	144.00	197.00	132.00	173.00	130.
Beck99	98391.00	240.00	208.00	159.00	229.00	154.00	164.00	157.00	155.00	194.00	143.00	147.00	138.00	137.00	133.00	126.00	181.00	137.00	130.00	132.
BartakSR10	92267.00	232.00	190.00	165.00	207.00	134.00	161.00	152.00	143.00	177.00	142.00	140.00	118.00	120.00	148.00	118.00	145.00	129.00	145.00	126.
Dejemeppe16	91908.00	336.00	282.00	214.00	283.00	197.00	219.00	168.00	174.00	251.00	170.00	182.00	171.00	163.00	160.00	151.00	198.00	157.00	162.00	140.
AwadMDMT22	87689.00	226.00	207.00	159.00	168.00	153.00	176.00	134.00	132.00	135.00	133.00	150.00	129.00	120.00	117.00	130.00	141.00	130.00	132.00	123.
BeckDDF98	85063.00	223.00	180.00	158.00	160.00	146.00	158.00	136.00	124.00	161.00	126.00	145.00	111.00	115.00	116.00	110.00	148.00	127.00	115.00	130.
AbreuN22	82635.00	229.00	153.00	162.00	146.00	137.00	167.00	142.00	124.00	128.00	137.00	104.00	108.00	124.00	116.00	134.00	111.00	111.00	161.00	105.
AbreuPNF23	82141.00	232.00	163.00	167.00	155.00	146.00	176.00	135.00	114.00	125.00	124.00	113.00	105.00	123.00	108.00	125.00	119.00	107.00	161.00	105.
AfsarVPG23	82041.00	190.00	151.00	141.00	137.00	138.00	144.00	128.00	121.00	125.00	132.00	108.00	118.00	117.00	110.00	121.00	139.00	117.00	133.00	107.
AstrandJZ20	80950.00	181.00	163.00	123.00	153.00	131.00	131.00	122.00	127.00	150.00	108.00	110.00	109.00	102.00	122.00	114.00	129.00	101.00	119.00	102.
ArtiguesLH13	79643.00	158.00	166.00	128.00	149.00	123.00	152.00	95.00	119.00	125.00	108.00	134.00	109.00	101.00	97.00	94.00	125.00	113.00	97.00	117.
Groleaz21	77963.00	368.00	295.00	226.00	246.00	198.00	227.00	201.00	195.00	234.00	191.00	166.00	171.00	179.00	181.00	159.00	213.00	144.00	206.00	131.
ArmstrongGOS21	77489.00	174.00	161.00	139.00	148.00	121.00	145.00	136.00	119.00	124.00	118.00	99.00	123.00	104.00	118.00	119.00	122.00	110.00	117.00	104.
BartakSR08	76981.00	158.00	148.00	127.00	164.00	108.00	122.00	123.00	121.00	151.00	112.00	105.00	95.00	102.00	120.00	102.00	113.00	95.00	117.00	100.
Fahimi16	76642.00	239.00	207.00	155.00	257.00	152.00	147.00	159.00	159.00	226.00	140.00	146.00	138.00	118.00	140.00	131.00	196.00	130.00	136.00	128.
ColT22	76539.00	248.00	201.00	185.00	162.00	153.00	179.00	158.00	141.00	162.00	147.00	139.00	153.00	138.00	133.00	142.00	153.00	126.00	158.00	122.
Caseau2001	76379.00	196.00	172.00	126.00	197.00	135.00	138.00	126.00	145.00	163.00	125.00	130.00	118.00	122.00	131.00	136.00	132.00	117.00	125.00	112.
Caballero19	74993.00	170.00	170.00	118.00	239.00	129.00	123.00	116.00	158.00	202.00	106.00	109.00	121.00	93.00	120.00	126.00	159.00	112.00	85.00	98.
AbreuNP23	74810.00	203.00	142.00	161.00	131.00	131.00	157.00	137.00	116.00	119.00	124.00	102.00	94.00	107.00	112.00	126.00	95.00	100.00	150.00	92.
Akan2023	74295.00	240.00	161.00	148.00	152.00	142.00	135.00	102.00	111.00	105.00	109.00	109.00	100.00	109.00	88.00	107.00	139.00	104.00	103.00	106.
BlazewiczDP96	74133.00	231.00	184.00	133.00	179.00	126.00	141.00	131.00	123.00	149.00	123.00	114.00	97.00	111.00	134.00	95.00	129.00	101.00	126.00	94.
BajestaniB13	73425.00	181.00	179.00	124.00	120.00	115.00	128.00	117.00	110.00	110.00	102.00	114.00	89.00	100.00	96.00	86.00	137.00	89.00	99.00	86.
Godet21a	73229.00	256.00	242.00	184.00	263.00	155.00	166.00	154.00	177.00	248.00	157.00	132.00	159.00	130.00	149.00	158.00	215.00	130.00	147.00	124.
AbreuAPNM21	72859.00	208.00	143.00	147.00	128.00	121.00	147.00	127.00	103.00	114.00	119.00	89.00	90.00	113.00	107.00	121.00	96.00	96.00	152.00	86.
BidotVLB09	72349.00	190.00	155.00	119.00	140.00	134.00	139.00	110.00	122.00	134.00	105.00	126.00	102.00	101.00	106.00	113.00	132.00	114.00	114.00	115.
BeckF98	71829.00	177.00	151.00	111.00	142.00	115.00	122.00	122.00	113.00	142.00	109.00	100.00	102.00	108.00	97.00	100.00	122.00	97.00	96.00	99.
AlfieriGPS23	71447.00	190.00	142.00	140.00	118.00	132.00	141.00	116.00	99.00	107.00	116.00	102.00	82.00	114.00	109.00	110.00	90.00	90.00	130.00	97.
ArkhipovBL19	71355.00	137.00	133.00	93.00	166.00	104.00	105.00	97.00	135.00	121.00	92.00	89.00	97.00	87.00	103.00	108.00	121.00	87.00	80.00	78.
Artigues2011	71298.00	136.00	130.00	100.00	156.00	102.00	98.00	109.00	127.00	146.00	99.00	91.00	75.00	89.00	122.00	100.00	104.00	84.00	95.00	83.
Banaszak2014	71118.00	155.00	115.00	114.00	124.00	96.00	97.00	109.00	105.00	123.00	97.00	105.00	87.00	81.00	93.00	88.00	114.00	97.00	94.00	106.
BosiM2001	70189.00	156.00	162.00	124.00	162.00	110.00	131.00	111.00	137.00	158.00	115.00	114.00	100.00	105.00	126.00	112.00	106.00	105.00	106.00	95.
Brucker2002	70113.00	196.00	190.00	129.00	180.00	132.00	138.00	130.00	152.00	156.00	119.00	120.00	100.00	106.00	129.00	129.00	140.00	101.00	115.00	93.
BeckF00	69945.00	146.00	130.00	106.00	167.00	108.00	105.00	110.00	117.00	156.00	99.00	106.00	93.00	84.00	107.00	91.00	123.00	92.00	92.00	94.
Braune2022	69094.00	146.00	153.00	121.00	165.00	125.00	133.00	128.00	131.00	136.00	115.00	116.00	112.00	104.00	118.00	118.00	114.00	105.00	100.00	103.
BonninMNE24	68937.00	172.00	156.00	122.00	159.00	113.00	122.00	112.00	119.00	130.00	104.00	98.00	110.00	99.00	112.00	106.00	118.00	99.00	131.00	99.
BeckR03	67978.00	156.00	149.00	127.00	132.00	131.00	127.00	115.00	119.00	134.00	111.00	129.00	93.00	100.00	103.00	90.00	110.00	107.00	97.00	106.
BeckPS03	67723.00	151.00	135.00	116.00	138.00	122.00	120.00	106.00	116.00	131.00	104.00	115.00	91.00	92.00	99.00	105.00	99.00	101.00	96.00	107.
ChenGPSH10	67577.00	163.00	158.00	115.00	164.00	101.00	109.00	121.00	127.00	149.00	110.00	120.00	96.00	96.00	113.00	97.00	127.00	102.00	106.00	102.
Bit-Monnot23	67573.00	135.00	126.00	105.00	154.00	106.00	99.00	120.00	129.00	177.00	105.00	94.00	103.00	98.00	121.00	105.00	112.00	86.00	105.00	91.
AntuoriHHEN20	67335.00	134.00	127.00	95.00	121.00	104.00	100.00	82.00	95.00	113.00	109.00	94.00	86.00	99.00	90.00	78.00	110.00	82.00	83.00	87.
Benedetti2008	67219.00	138.00	121.00	108.00	140.00	102.00	103.00	103.00	111.00	130.00	98.00	102.00	94.00	88.00	94.00	97.00	121.00	95.00	81.00	96.
Other		106273.00	85609.00	83071.00	78666.00	79875.00	79175.00	77397.00	76866.00	74943.00	75759.00	73164.00	73082.00	72515.00	71399.00	70940.00	69201.00	69126.00	68219.00	67753.

Table 12: Heat Map based on 100*Cosine Similarity of Concepts (high = similar)

From/To	Total	ZeballosM09	ZeballosH05	abs-2312-13682	abs-1901-07914	VilimLS15	ZhangYW21	Xujun2009	ZouZ20	ZeballosQH10	Zhang2005	abs-1902-09244	Wolf05	abs-2211-14492	ZhangBB22	ZeballosNH11	abs-2305-19888	WatsonB08	ZibranR11a	abs-2306-05747	Zou2024	WikarekS19	ZhouGL15	Other
Total		561.81	560.78	547.92	547.27	543.30	541.79	540.22	538.49	538.13	535.81	534.43	529.59	528.90	527.84	527.26	526.47	526.07	525.75	525.73	523.99	520.12	519.33	
Banaszak2014	561.24	0.77	0.76	0.59	0.67	0.65	0.63	0.76	0.62	0.66	0.66	0.56	0.68	0.59	0.60	0.66	0.57	0.64	0.60	0.57	0.62	0.65	0.65	547.07
Banaszak2008	557.92	0.80	0.77	0.60	0.70	0.64	0.59	0.80	0.59	0.70	0.67	0.56	0.71	0.62	0.59	0.66	0.56	0.67	0.62	0.59	0.58	0.64	0.63	543.63
Bartak02a	553.43	0.62	0.66	0.60	0.65	0.70	0.61	0.68	0.59	0.62	0.70	0.57	0.66	0.59	0.61	0.59	0.53	0.63	0.50	0.57	0.56	0.67	0.56	539.96
BartakSR08	551.91	0.60	0.66	0.57	0.60	0.68	0.63	0.70	0.56	0.59	0.80	0.58	0.70	0.63	0.71	0.60	0.56	0.67	0.52	0.59	0.60	0.70	0.65	538.00
BeckPS03	540.82	0.73	0.78	0.57	0.64	0.73	0.68	0.72	0.55	0.70	0.70	0.73	0.74	0.65	0.66	0.74	0.60	0.73	0.49	0.64	0.59	0.72	0.64	526.09
AstrandJZ20	540.70	0.61	0.63	0.61	0.56	0.67	0.67	0.67	0.53	0.59	0.57	0.66	0.62	0.57	0.68	0.59	0.62	0.67	0.52	0.64	0.55	0.63	0.67	527.19
AfsarVPG23	540.38	0.62	0.65	0.54	0.53	0.63	0.74	0.56	0.59	0.68	0.52	0.69	0.62	0.69	0.61	0.58	0.59	0.69	0.50	0.67	0.59	0.55	0.60	526.96
ArkhipovBL19	532.51	0.54	0.54	0.51	0.53	0.80	0.65	0.55	0.49	0.57	0.63	0.59	0.71	0.54	0.64	0.54	0.59	0.60	0.41	0.55	0.56	0.72	0.54	519.74
AstrandJZ18	532.09	0.67	0.66	0.69	0.69	0.62	0.52	0.69	0.56	0.64	0.54	0.52	0.60	0.51	0.53	0.53	0.55	0.56	0.64	0.51	0.52	0.54	0.56	519.25
Benedetti2008	528.56	0.66	0.69	0.60	0.61	0.68	0.64	0.71	0.59	0.65	0.75	0.60	0.78	0.60	0.61	0.64	0.60	0.64	0.50	0.61	0.62	0.66	0.64	514.48
AngelsmarkJ00	524.24	0.63	0.53	0.48	0.60	0.58	0.48	0.64	0.50	0.49	0.68	0.39	0.60	0.52	0.51	0.56	0.44	0.56	0.54	0.47	0.47	0.57	0.54	512.44
ArtiguesLH13	523.56	0.68	0.71	0.58	0.52	0.62	0.49	0.66	0.57	0.65	0.68	0.61	0.63	0.56	0.53	0.71	0.58	0.52	0.59	0.49	0.51	0.53	0.57	510.58
Astrand0F21	523.50	0.57	0.64	0.64	0.64	0.65	0.68	0.59	0.49	0.59	0.50	0.56	0.59	0.55	0.66	0.51	0.59	0.64	0.46	0.63	0.43	0.63	0.54	510.69
Beck07	523.08	0.64	0.64	0.56	0.56	0.73	0.71	0.73	0.55	0.58	0.64	0.64	0.68	0.67	0.73	0.61	0.52	0.85	0.60	0.68	0.61	0.65	0.60	508.92
AbidinK20	516.73	0.55	0.55	0.56	0.50	0.52	0.58	0.42	0.70	0.60	0.41	0.56	0.45	0.49	0.51	0.56	0.51	0.51	0.64	0.46	0.58	0.49	0.46	505.15
AalianPG23	516.52	0.62	0.59	0.73	0.59	0.59	0.54	0.63	0.56	0.59	0.47	0.58	0.56	0.44	0.52	0.48	0.61	0.55	0.61	0.56	0.53	0.49	0.50	504.18
Astrand2020	516.15	0.57	0.70	0.64	0.62	0.59	0.67	0.66	0.53	0.62	0.54	0.57	0.64	0.51	0.61	0.54	0.59	0.61	0.53	0.58	0.49	0.63	0.53	503.19
BeckDDF98	515.99	0.72	0.73	0.57	0.63	0.59	0.63	0.67	0.55	0.67	0.73	0.67	0.61	0.60	0.58	0.71	0.52	0.62	0.56	0.57	0.56	0.65	0.58	502.29
Bartak02	511.83	0.67	0.59	0.53	0.59	0.60	0.47	0.69	0.55	0.53	0.70	0.45	0.59	0.49	0.51	0.60	0.44	0.51	0.56	0.44	0.54	0.66	0.51	499.61
BeckFW11	511.58	0.61	0.62	0.63	0.60	0.74	0.72	0.67	0.47	0.63	0.59	0.62	0.70	0.72	0.75	0.55	0.62	0.93	0.53	0.77	0.54	0.69	0.62	497.25
Alaka21	511.01	0.53	0.60	0.56	0.57	0.52	0.63	0.53	0.68	0.60	0.47	0.53	0.51	0.49	0.53	0.46	0.55	0.48	0.52	0.48	0.66	0.50	0.54	499.08
Abuwarda2019	508.52	0.58	0.58	0.52	0.49	0.56	0.71	0.64	0.74	0.63	0.58	0.55	0.56	0.52	0.48	0.53	0.56	0.48	0.64	0.47	0.68	0.45	0.49	496.07
AwadMDMT22	508.47	0.61	0.66	0.53	0.47	0.61	0.65	0.55	0.58	0.66	0.59	0.68	0.68	0.61	0.57	0.71	0.66	0.58	0.51	0.58	0.54	0.56	0.57	495.32
Balduccini2017	508.13	0.58	0.55	0.52	0.58	0.61	0.48	0.62	0.54	0.47	0.61	0.47	0.54	0.54	0.49	0.54	0.46	0.58	0.50	0.50	0.52	0.60	0.55	496.26
AkramNHRSA23	503.99	0.54	0.56	0.57	0.63	0.55	0.62	0.56	0.57	0.55	0.52	0.47	0.57	0.63	0.50	0.43	0.59	0.59	0.57	0.58	0.51	0.43	0.58	491.89
Astrand21	503.69	0.54	0.57	0.53	0.49	0.61	0.61	0.54	0.51	0.55	0.52	0.63	0.55	0.56	0.61	0.55	0.62	0.57	0.47	0.57	0.55	0.55	0.66	491.33
BartakSR10	503.61	0.58	0.64	0.47	0.60	0.62	0.60	0.58	0.51	0.62	0.77	0.56	0.70	0.61	0.68	0.62	0.55	0.59	0.44	0.54	0.55	0.68	0.63	490.46
Artigues2011	503.42	0.53	0.54	0.44	0.51	0.71	0.63	0.57	0.42	0.52	0.62	0.55	0.63	0.55	0.72	0.52	0.47	0.63	0.38	0.53	0.50	0.70	0.54	491.21
AlakaP23	499.99	0.52	0.55	0.51	0.61	0.51	0.63	0.53	0.67	0.58	0.47	0.51	0.45	0.45	0.50	0.49	0.51	0.45	0.52	0.43	0.64	0.53	0.49	488.45
Adelgren2023	499.68	0.52	0.53	0.56	0.54	0.54	0.57	0.55	0.46	0.51	0.54	0.48	0.60	0.53	0.57	0.52	0.65	0.56	0.41	0.53	0.39	0.55	0.56	488.01
AlesioBNG15	499.32	0.55	0.53	0.51	0.56	0.54	0.60	0.50	0.66	0.56	0.54	0.48	0.58	0.53	0.51	0.54	0.56	0.55	0.64	0.52	0.60	0.49	0.56	487.22
Bocewicz2009	498.69	0.70	0.72	0.54	0.65	0.64	0.59	0.71	0.59	0.61	0.67	0.54	0.74	0.55	0.60	0.66	0.54	0.64	0.59	0.56	0.61	0.67	0.58	484.98
BockmayrP06	498.32	0.70	0.65	0.73	0.70	0.65	0.49	0.62	0.56	0.64	0.63	0.55	0.60	0.54	0.54	0.58	0.60	0.59	0.61	0.55	0.52	0.58	0.60	485.10
Beck99	497.59	0.60	0.62	0.51	0.57	0.62	0.64	0.57	0.55	0.60	0.71	0.59	0.65	0.57	0.56	0.60	0.55	0.63	0.50	0.56	0.59	0.60	0.55	484.64
Beck06	494.53	0.61	0.65	0.57	0.59	0.64	0.63	0.70	0.40	0.56	0.61	0.61	0.65	0.67	0.67	0.60	0.49	0.84	0.47	0.66	0.48	0.68	0.64	481.10
BeckF00a	493.72	0.66	0.61	0.49	0.56	0.64	0.54	0.69	0.52	0.56	0.73	0.49	0.70	0.52	0.56	0.60	0.46	0.63	0.52	0.51	0.55	0.64	0.55	480.98
BeckF98	493.24	0.55	0.62	0.46	0.60	0.61	0.68	0.57	0.51	0.58	0.70	0.59	0.66	0.59	0.55	0.55	0.55	0.60	0.42	0.58	0.54	0.63	0.51	480.58
BenderWS21	491.51	0.68	0.69	0.70	0.68	0.65	0.66	0.74	0.61	0.65	0.56	0.63	0.65	0.52	0.53	0.57	0.70	0.63	0.63	0.59	0.63	0.60	0.56	477.64
BeniniLMR11	491.31	0.65	0.66	0.62	0.61	0.65	0.56	0.61	0.65	0.64	0.58	0.57	0.62	0.52	0.56	0.63	0.58	0.56	0.58	0.53	0.61	0.56	0.49	478.27
CarchraeB09	488.34	0.69	0.68	0.71	0.67	0.80	0.70	0.71	0.53	0.64	0.63	0.65	0.73	0.71	0.75	0.65	0.61	0.85	0.54	0.76	0.53	0.67	0.62	473.51
Alesio2013	488.12	0.57	0.56	0.52	0.57	0.52	0.55	0.50	0.57	0.58	0.58	0.45	0.64	0.52	0.51	0.53	0.57	0.55	0.61	0.53	0.55	0.49	0.56	476.09
AbreuN22	487.84	0.48	0.58	0.56	0.48	0.59	0.66	0.45	0.50	0.58	0.39	0.62	0.54	0.64	0.58	0.50	0.70	0.62	0.41	0.63	0.51	0.55	0.65	475.62
Other		535.98	534.32	524.00	522.50	516.87	516.05	513.97	515.03	512.92	510.35	510.52	503.17	504.99	503.15	502.92	502.72	500.07	503.36	501.93	500.67	494.94	495.26	


Distribution Plot of Distance Values by References (Low value is similar)
$\cdot 10^5$
Count
Distance
3.5
3
2.5
2
1.5
1
0.5
0
0.00
0.05
0.10
0.20
0.25
0.30
0.35
0.40
0.45
0.50
0.55
0.60
0.65
0.70
0.75
0.80
0.85
0.90
0.95
1.00
2
5
2
6
11
8
10
12
27
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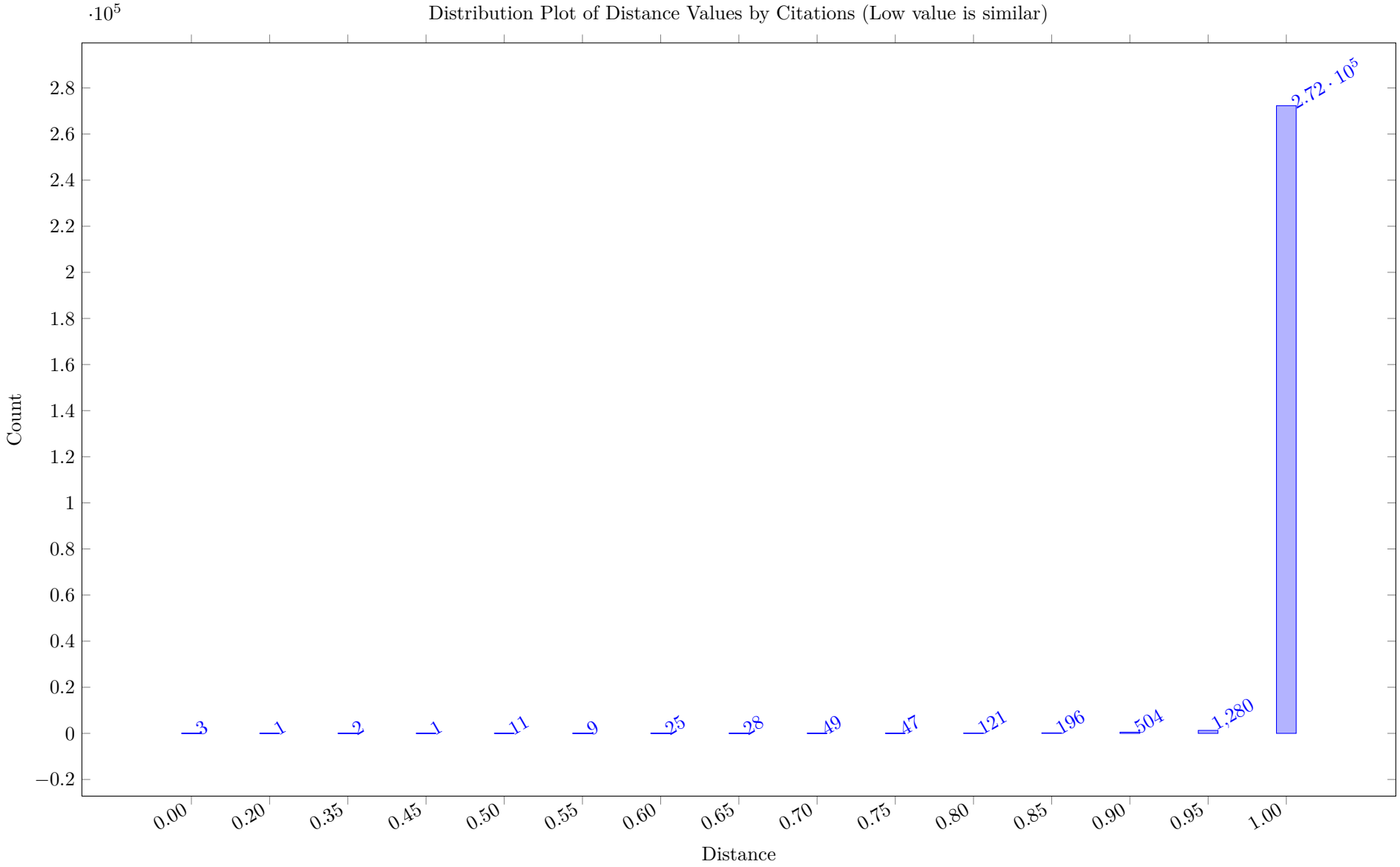
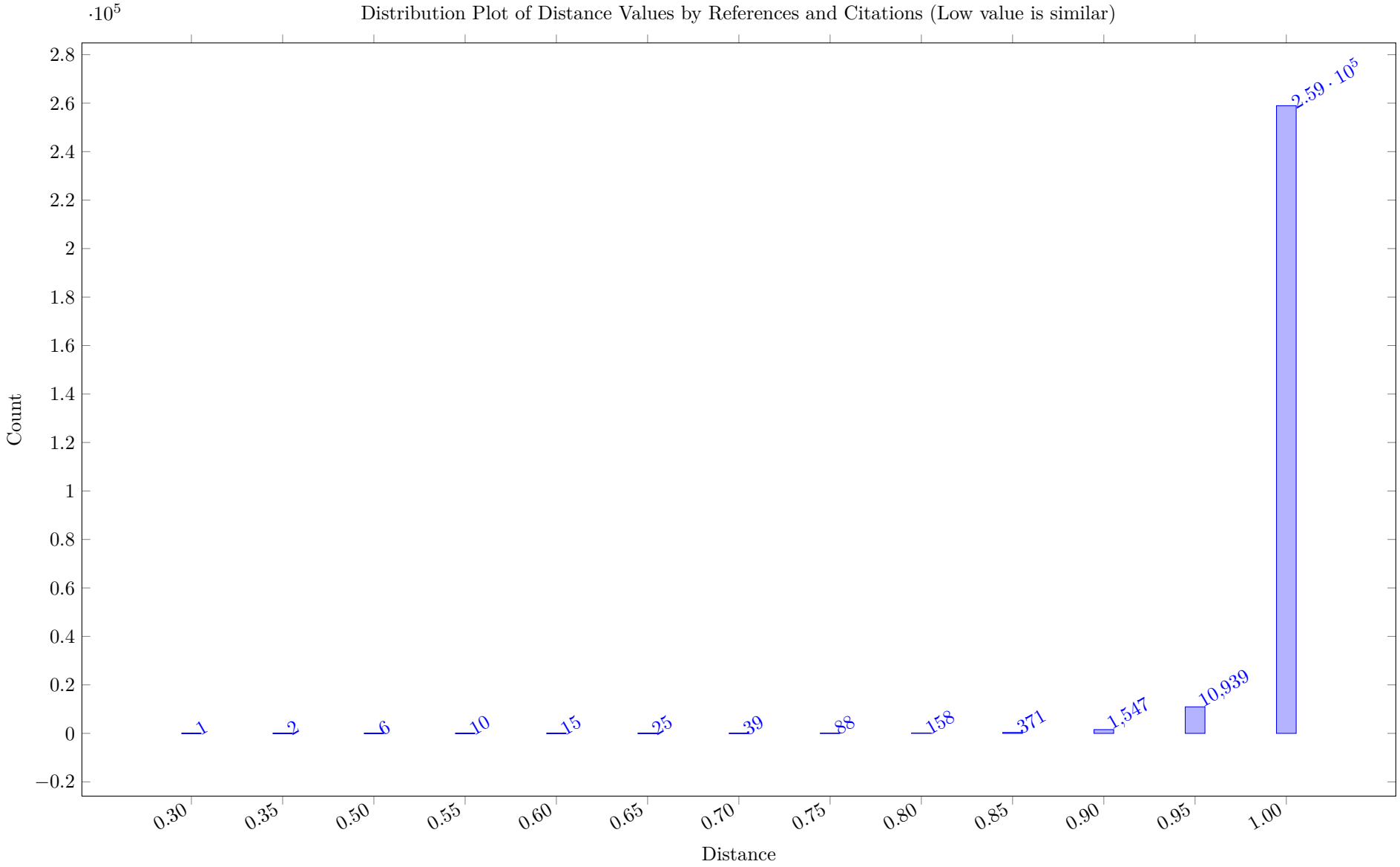
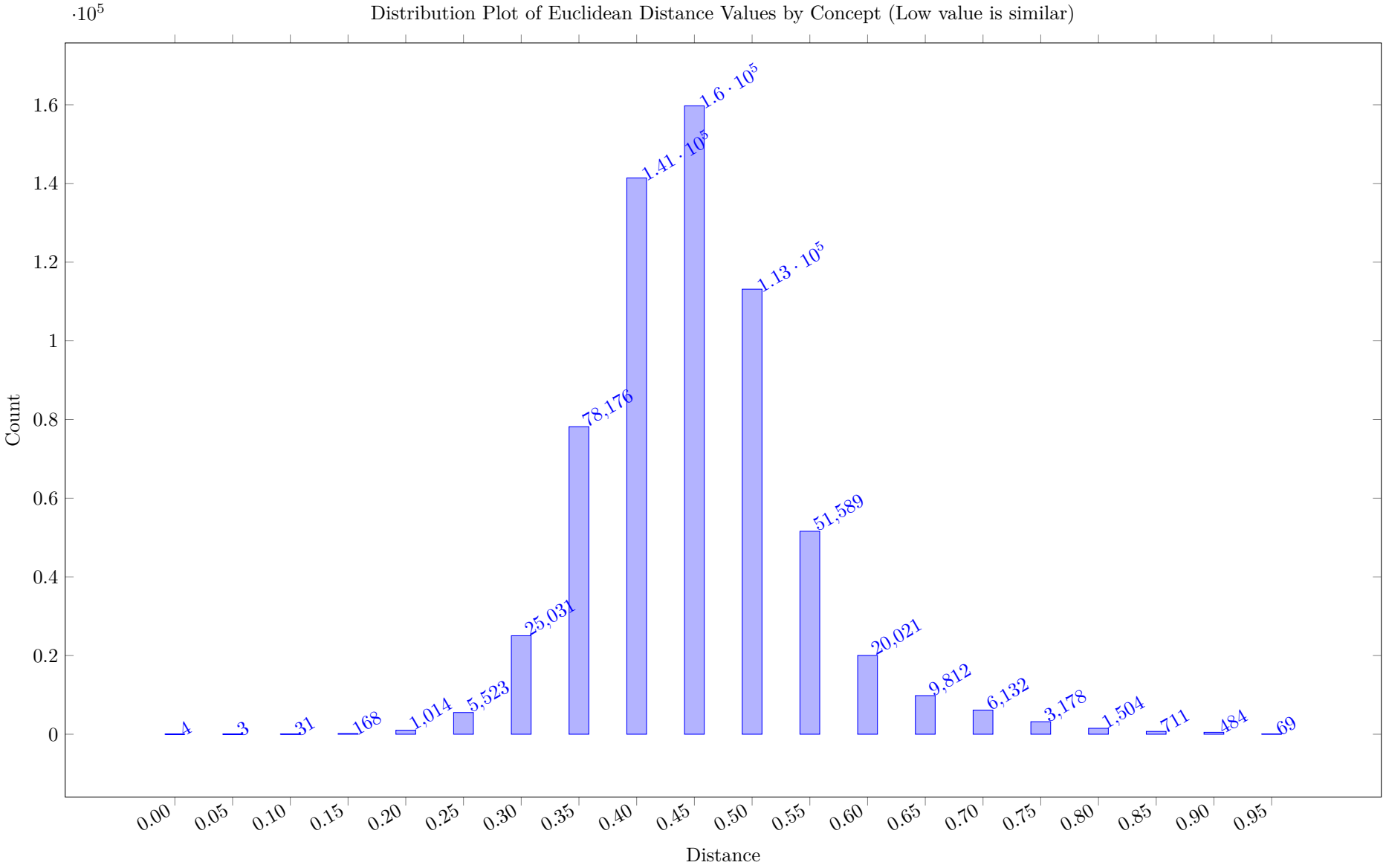
101
209
379
823
1,812
5,929
19,193
$3.21 \cdot 10^5$

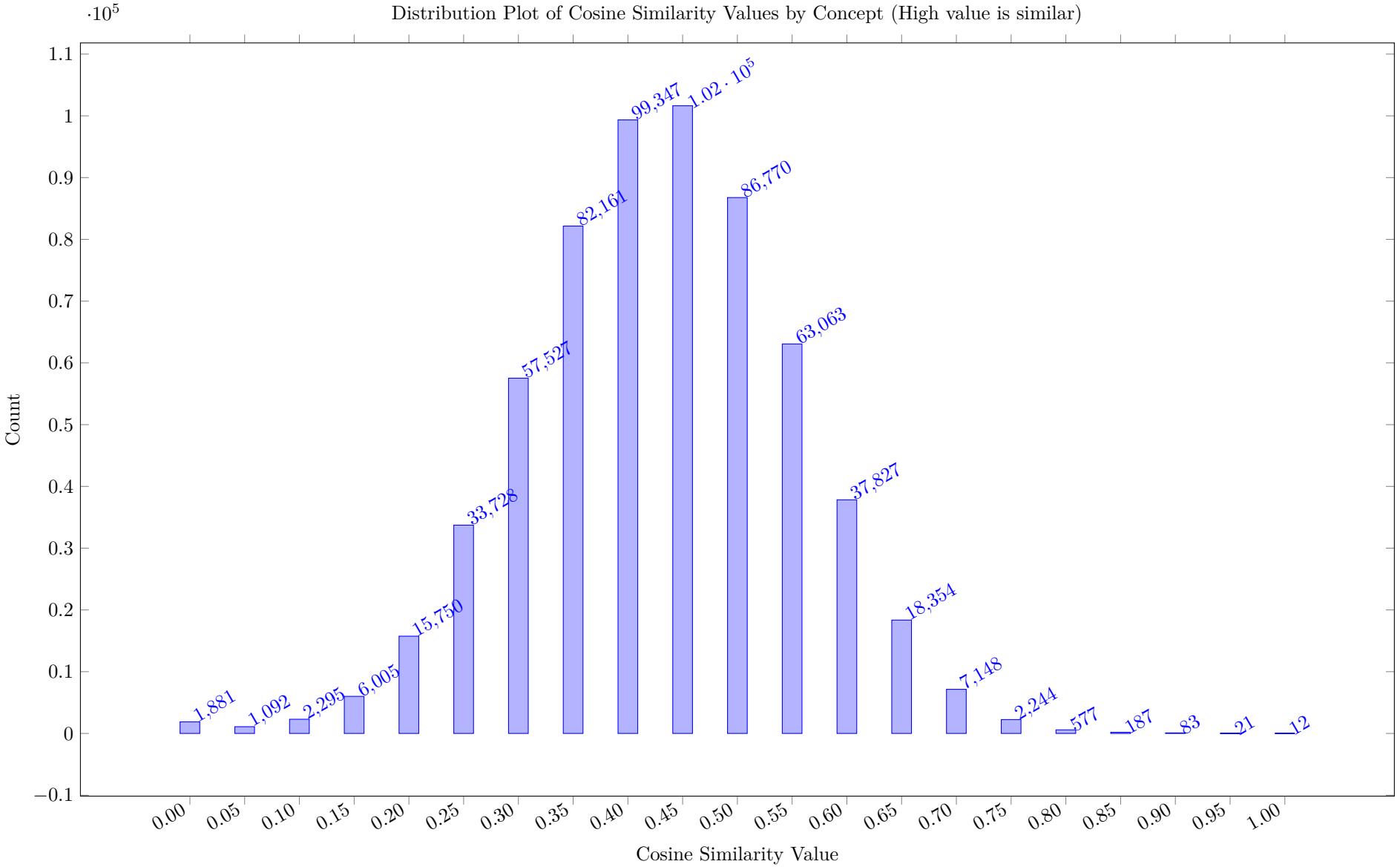

Distribution Plot of Distance Values by Citations (Low value is similar)
$\cdot 10^5$
Count
2.8
2.6
2.4
2.2
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
−0.2
3
1
2
1
11
9
25
28
49
47
121
196
504
1,280
$2.72 \cdot 10^5$
0.00
0.20
0.35
0.45
0.50
0.55
0.60
0.65
0.70
0.75
0.80
0.85
0.90
0.95
1.00
Distance

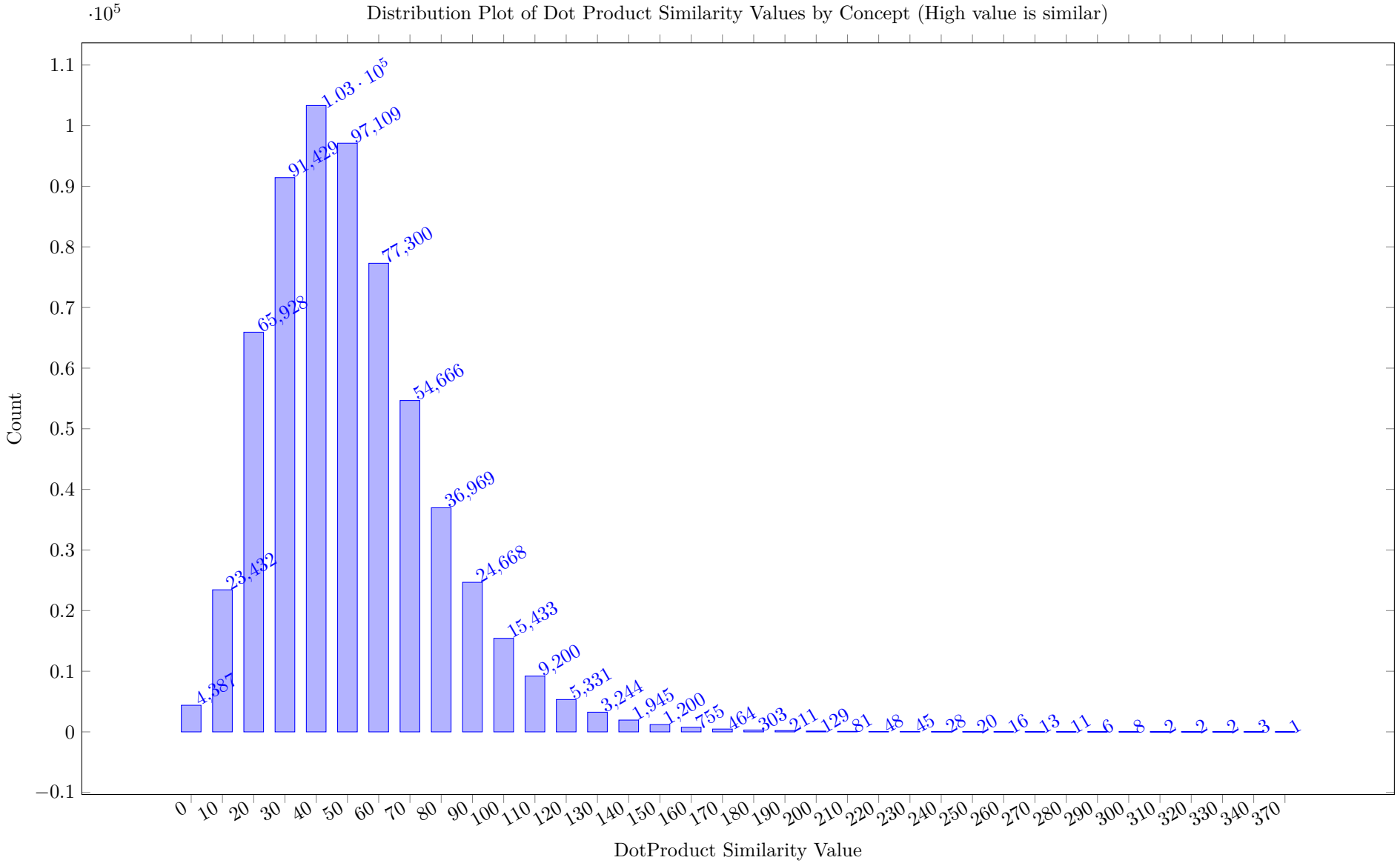


The similarity by concept uses the Euclidean distance between the feature vectors for two works. We translate the MatchLevel for each Concept into a linear

scale, and then calculate the distances as the square root of the sum of squared differences for each feature. The distribution plot below rounds the distances to integer values. Similarity values of this type are only calculated when both works have a local copy, from which we extract the features. If either work does not have a local copy, the similarity is set to be NaN.


Distribution Plot of Euclidean Distance Values by Concept (Low value is similar)
$\cdot 10^5$
Count
Distance
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
0.00
0.05
0.10
0.15
0.20
0.25
0.30
0.35
0.40
0.45
0.50
0.55
0.60
0.65
0.70
0.75
0.80
0.85
0.90
0.95
4
3
31
168
1,014
5,523
25,031
78,176
$1.41 \cdot 10^5$
$1.6 \cdot 10^5$
$1.13 \cdot 10^5$
51,589
20,021
9,812
6,132
3,178
1,504
711
484
69

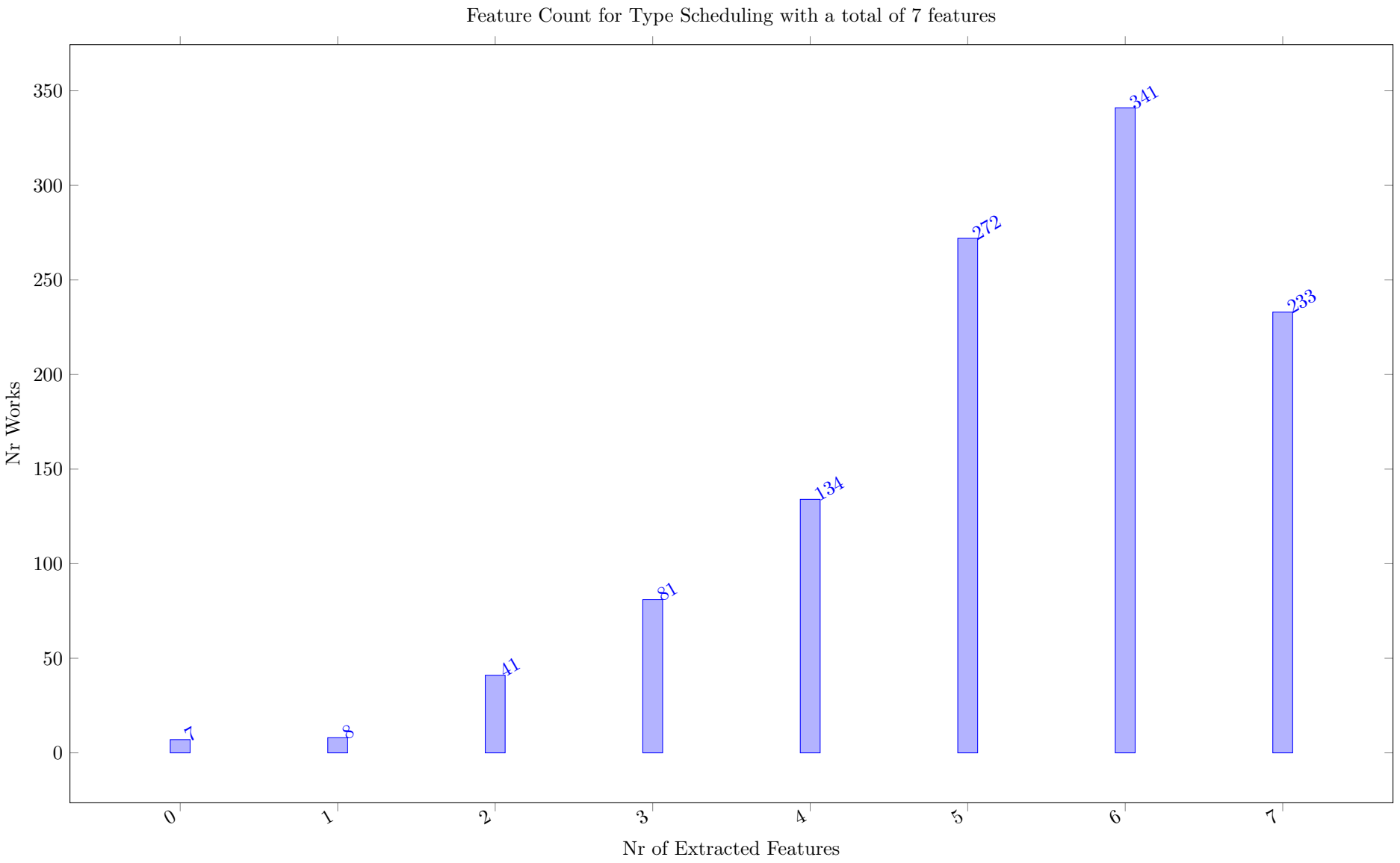

Distribution Plot of Cosine Similarity Values by Concept (High value is similar)
$\cdot 10^5$
Count
Cosine Similarity Value
1.1
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
−0.1
1,881
1,092
2,295
6,005
15,750
33,728
57,527
82,161
99,347
$1.02 \cdot 10^5$
86,770
63,063
37,827
18,354
7,148
2,244
577
187
83
21
12
0.00
0.05
0.10
0.15
0.20
0.25
0.30
0.35
0.40
0.45
0.50
0.55
0.60
0.65
0.70
0.75
0.80
0.85
0.90
0.95
1.00

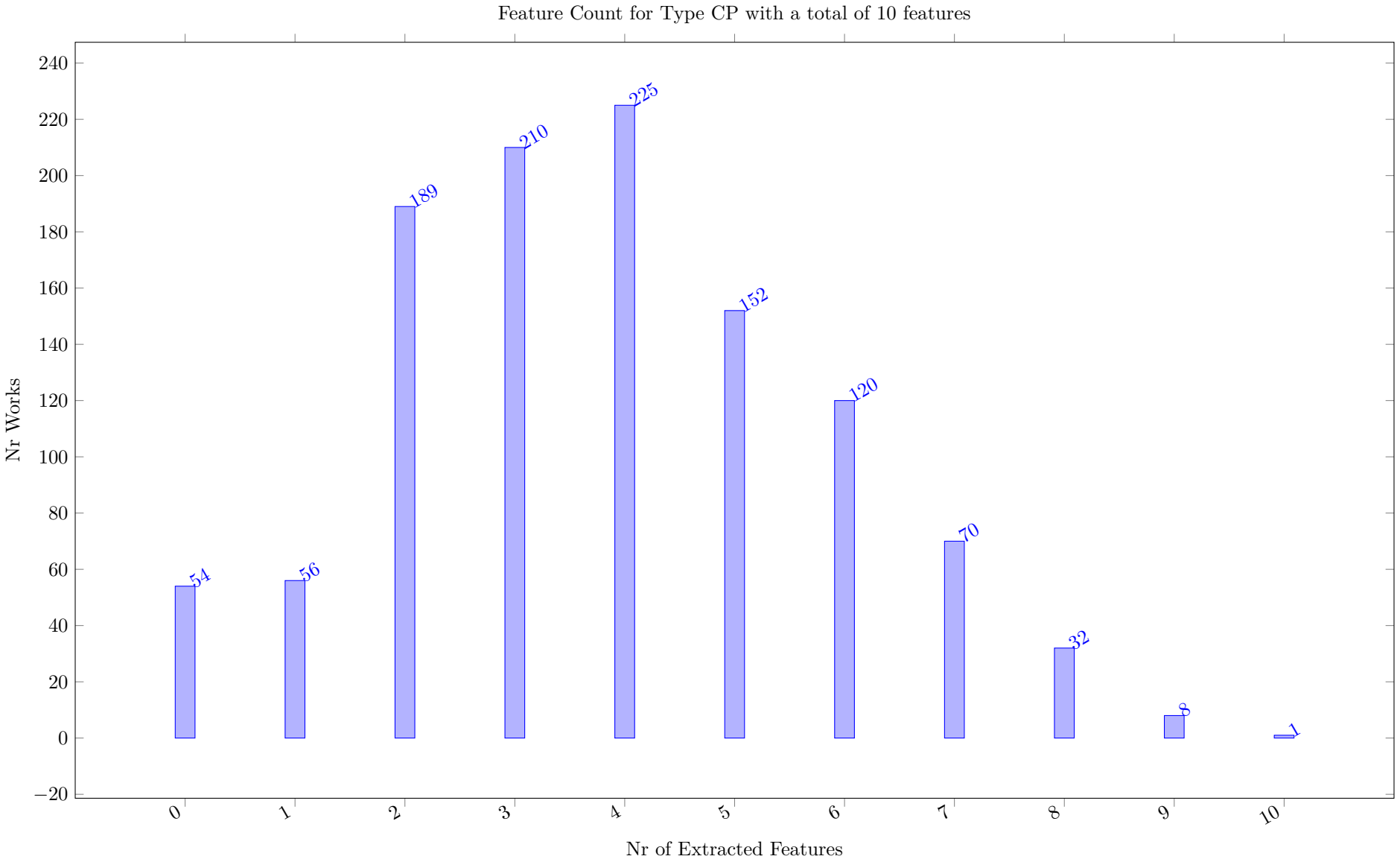

Distribution Plot of Dot Product Similarity Values by Concept (High value is similar)
$\cdot 10^5$
Count
DotProduct Similarity Value
1.1
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
−0.1
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290 300 310 320 330 340 370
4,387
23,432
65,928
91,429
$1.03 \cdot 10^5$
97,109
77,300
54,666
36,969
24,668
15,433
9,200
5,331
3,244
1,945
1,200
755
464
303
211
129
81
48
45
28
20
16
13
11
6
8
2
2
2
3
1

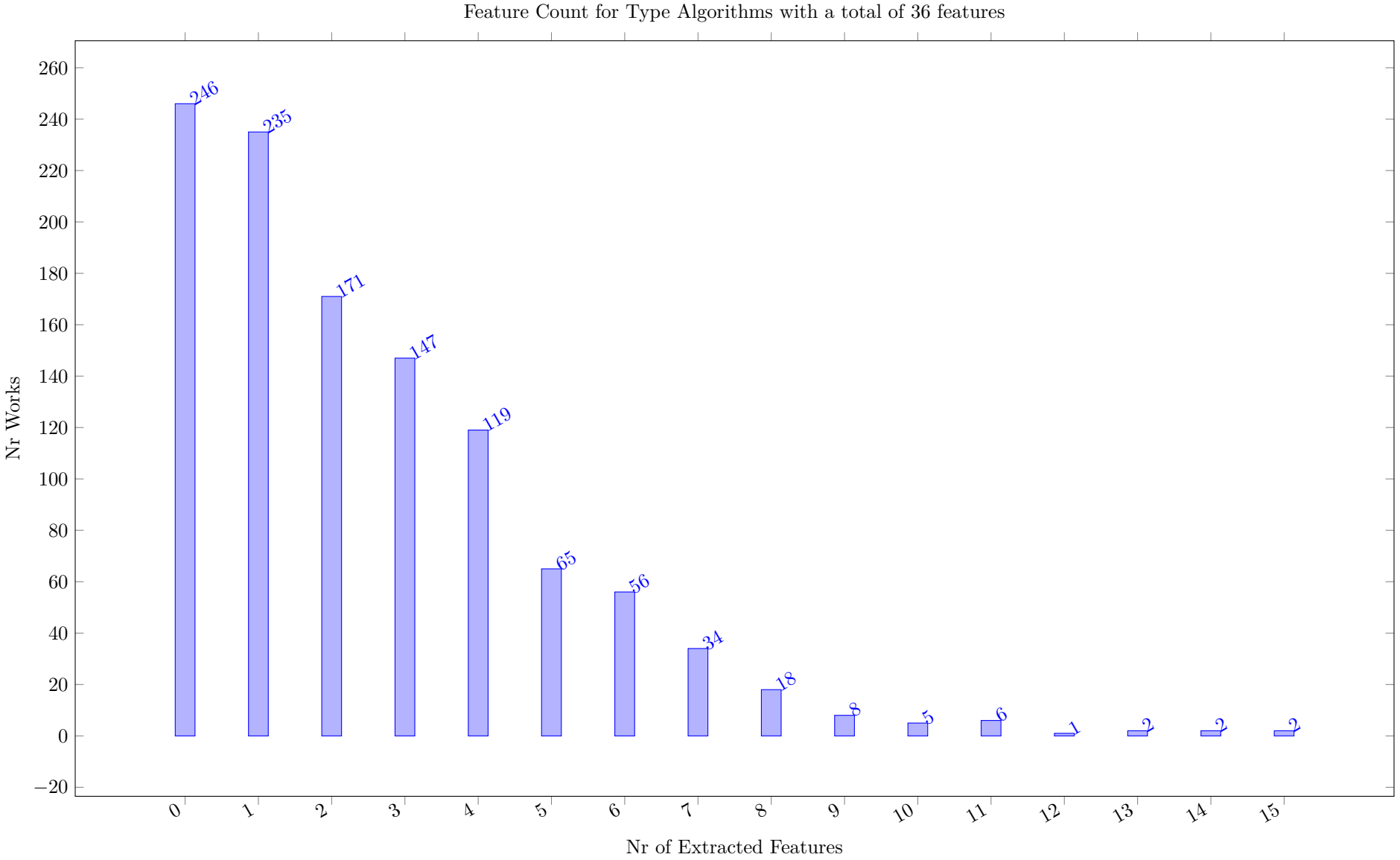
12 Concept Distribution

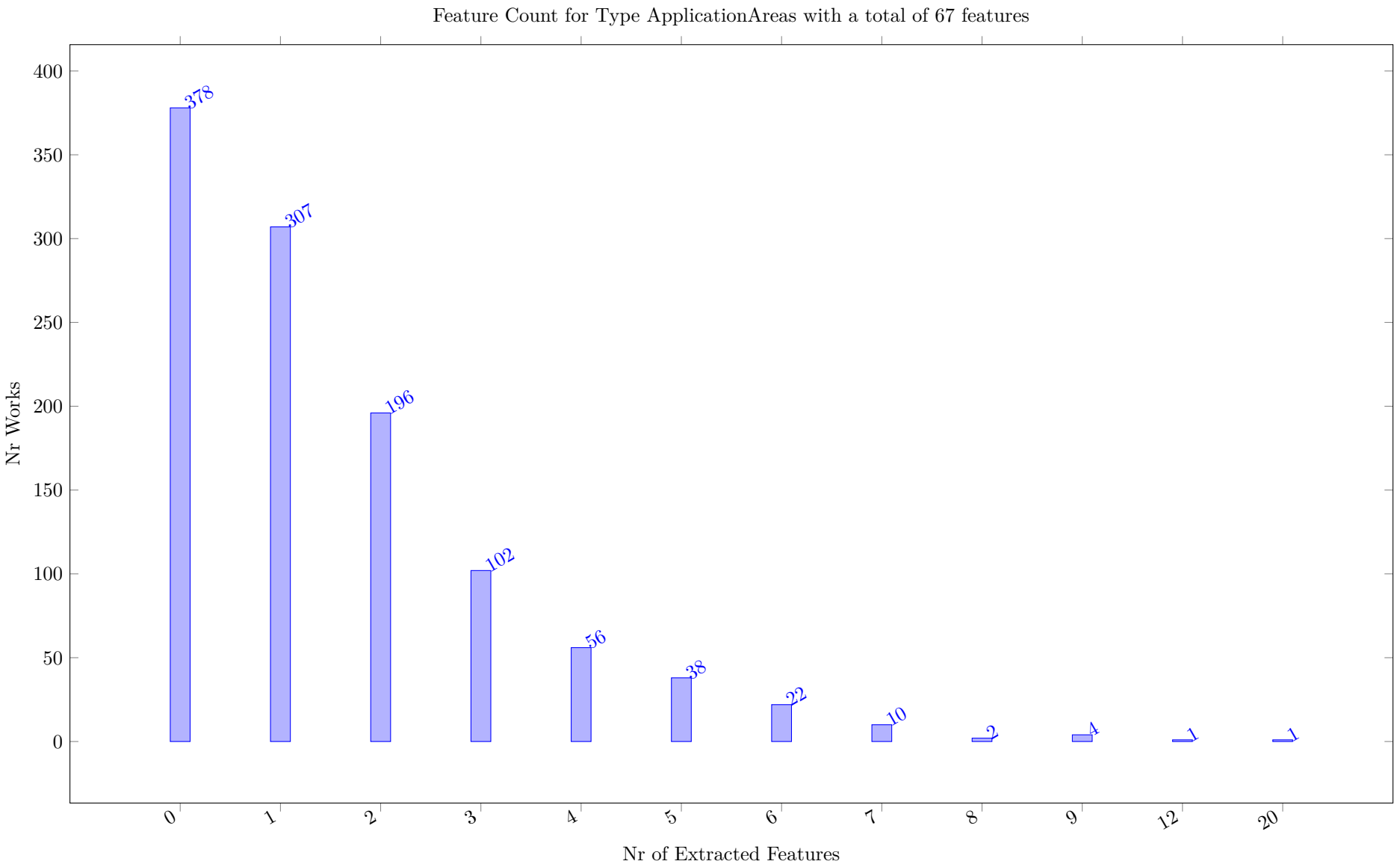
For each concept type, we count how many features are extracted by the individual works that do have a local copy, e.g. for which we can extract features. We can compare the number of features extracted to the number of concepts of a given type, which is stated in the title of the diagram.

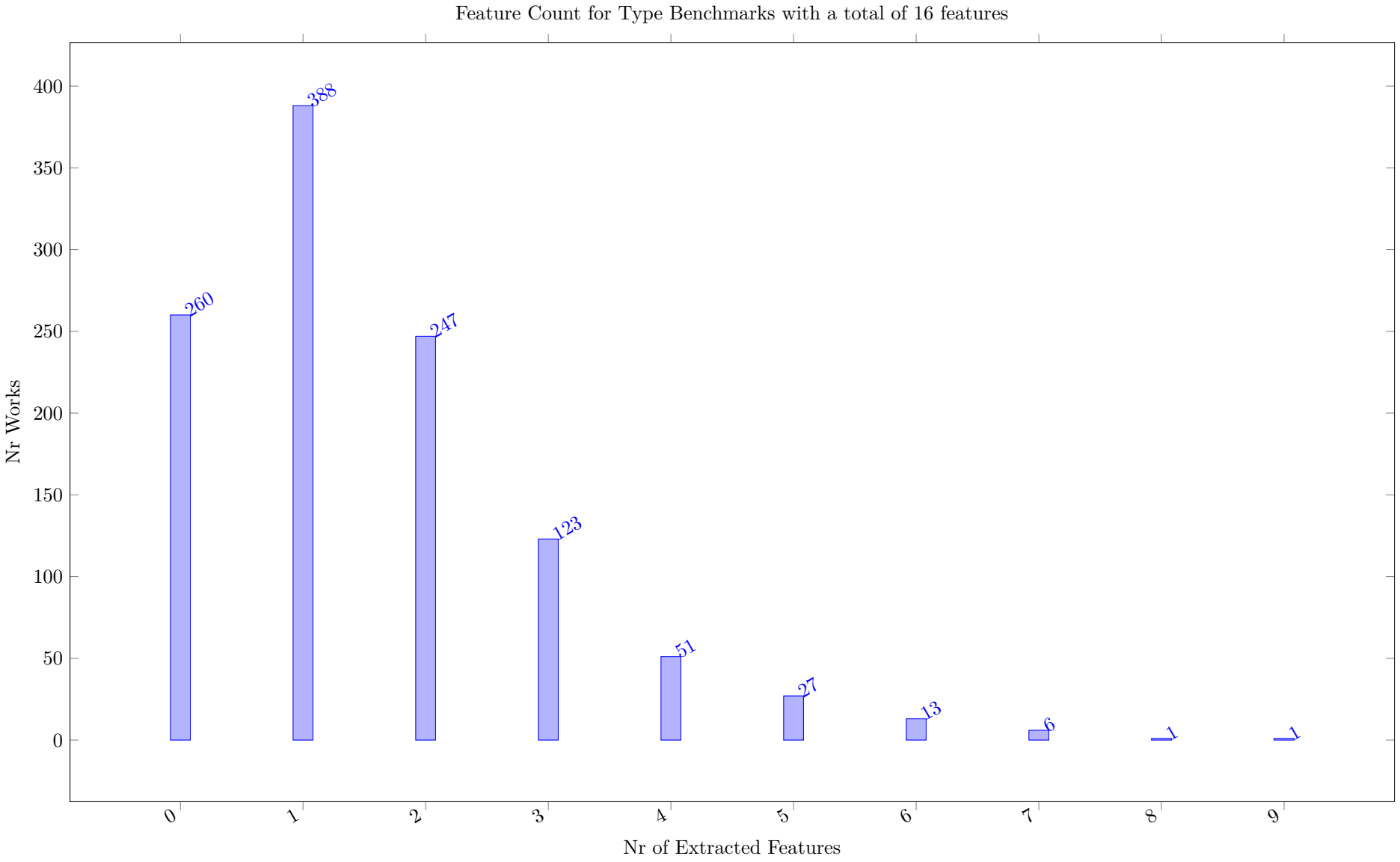
A high count indicates that a work covers many of the concepts of the given type, a low count might mean that our ontology does not have relevant concepts for that work.

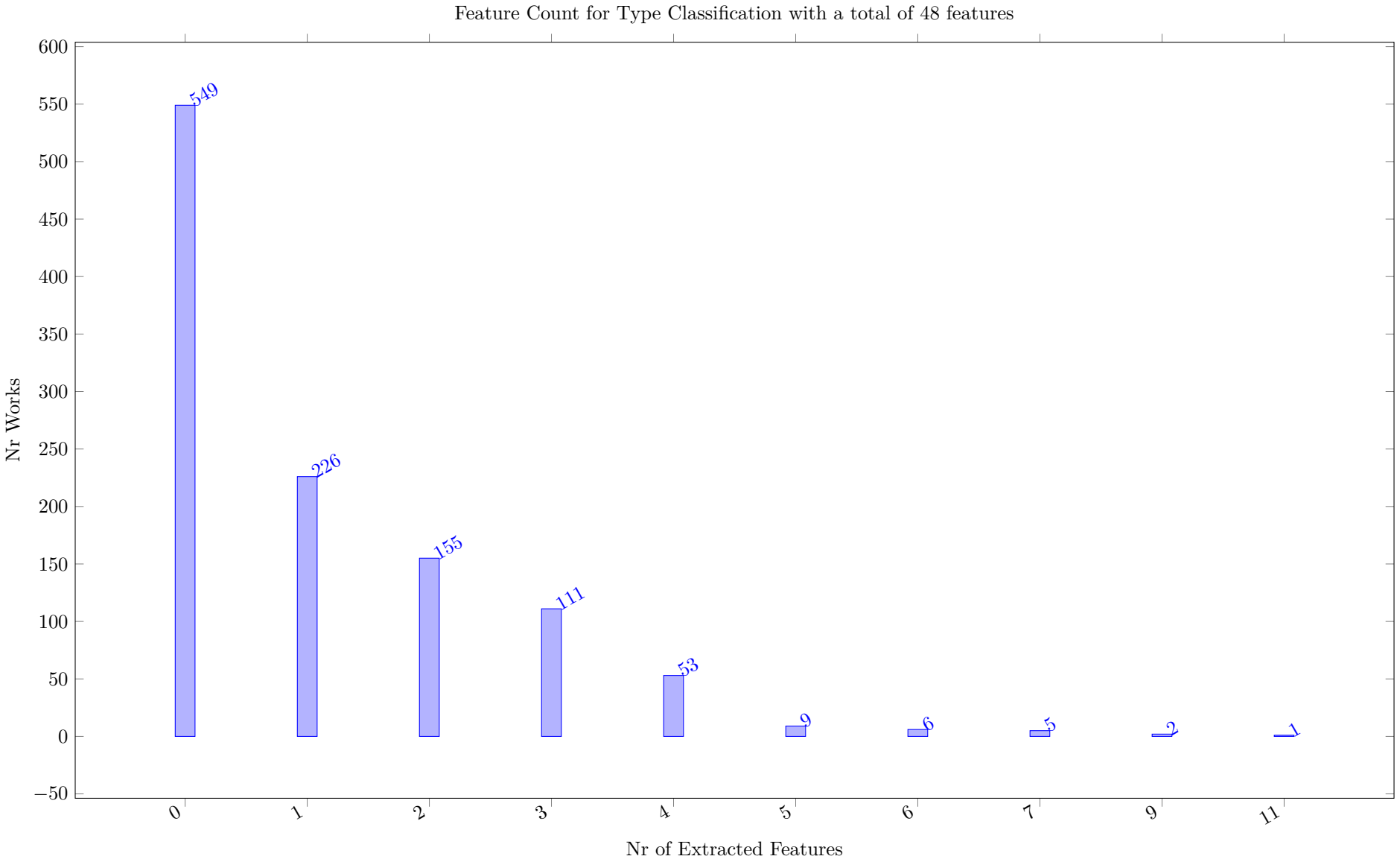

Feature Count for Type Scheduling with a total of 7 features
Nr Works
0
50
100
150
200
250
300
350
7
8
41
81
134
272
341
233
0
1
2
3
4
5
6
7
Nr of Extracted Features

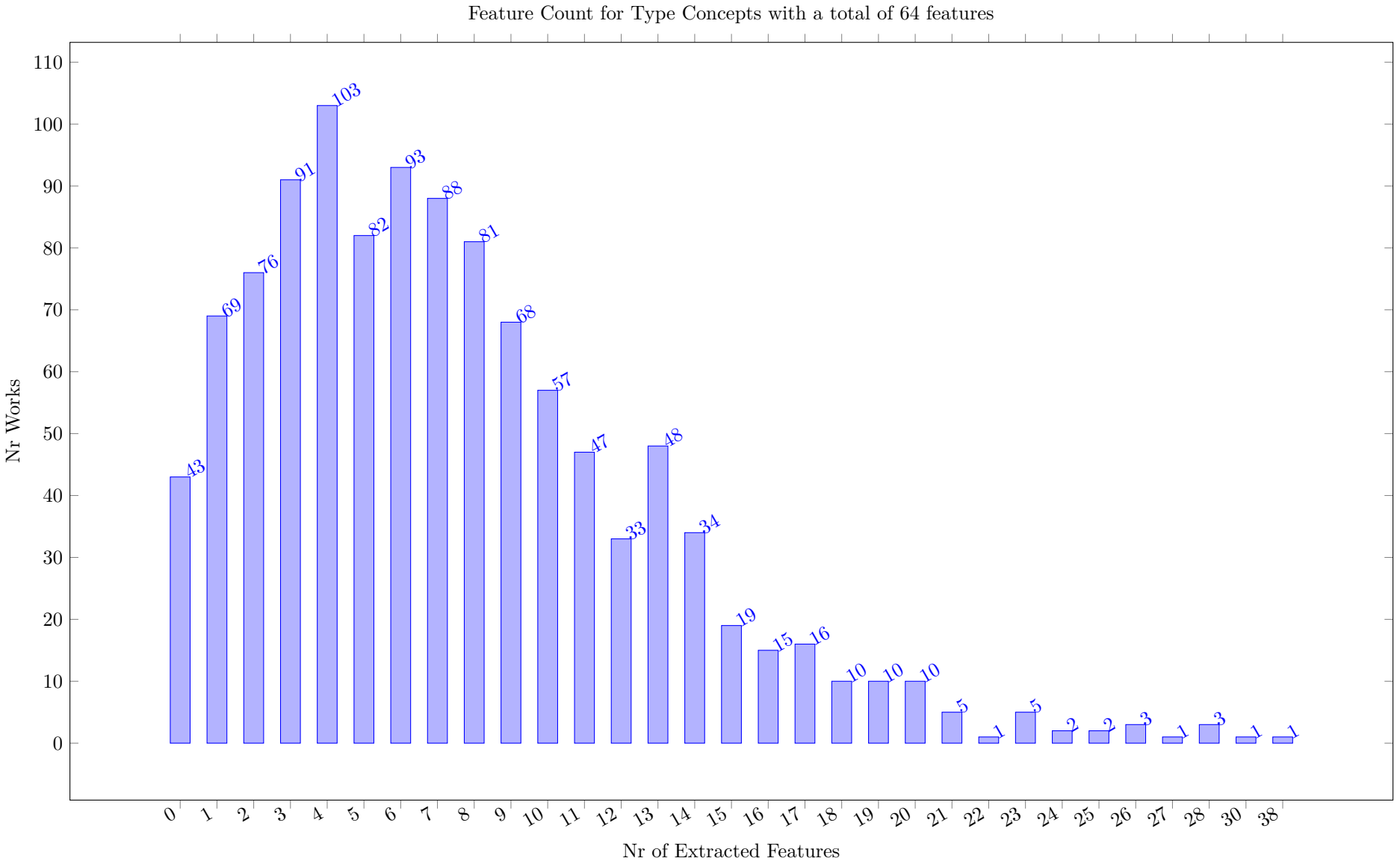

Feature Count for Type CP with a total of 10 features
Nr Works
Nr of Extracted Features
240
220
200
180
160
140
120
100
80
60
40
20
0
−20
0
1
2
3
4
5
6
7
8
9
10
54
56
189
210
225
152
120
70
32
8
1

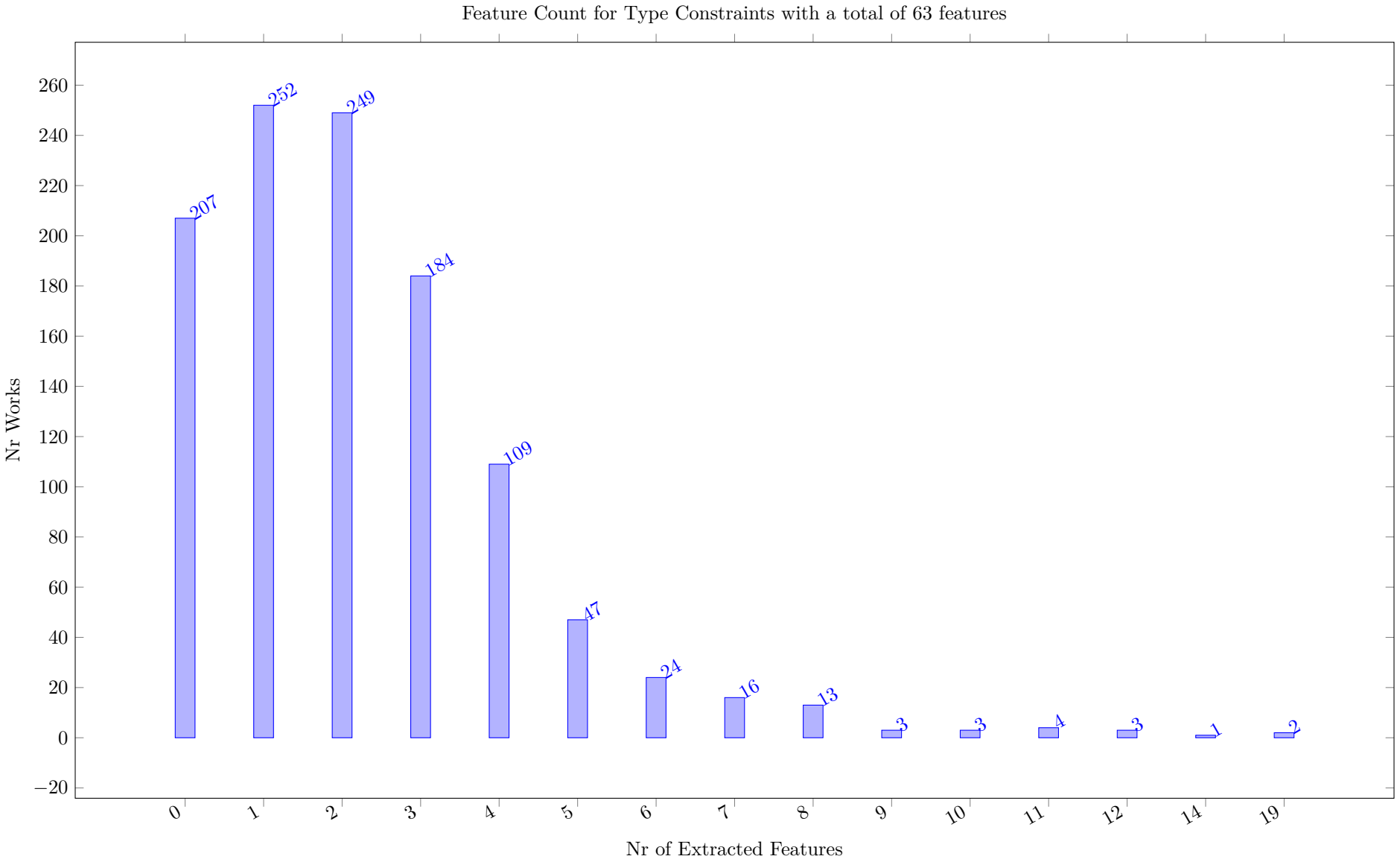

Feature Count for Type Algorithms with a total of 36 features
Nr Works
Nr of Extracted Features
260
240
220
200
180
160
140
120
100
80
60
40
20
0
−20
246
235
171
147
119
65
56
34
18
8
5
6
1
2
2
2
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15

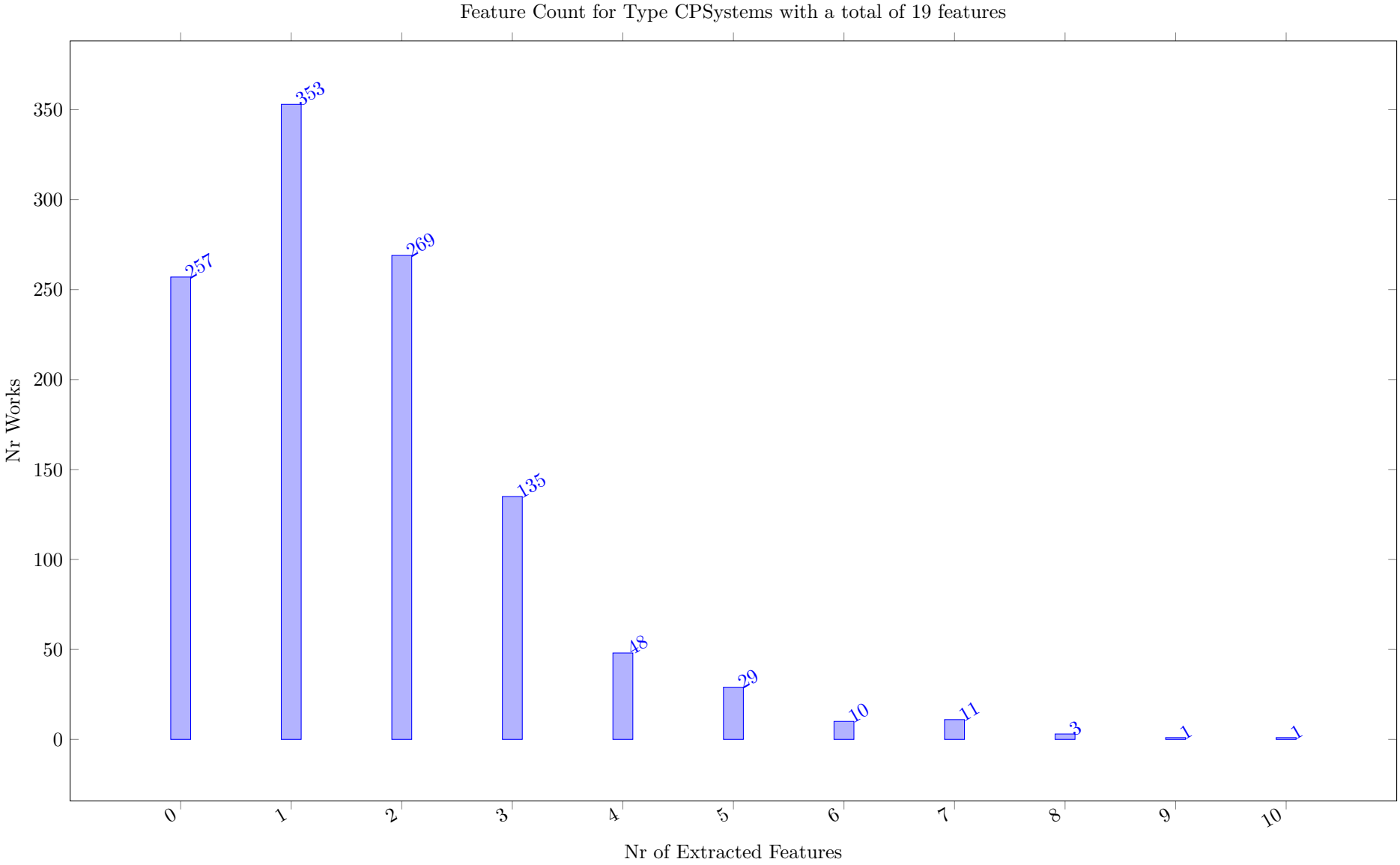

Feature Count for Type ApplicationAreas with a total of 67 features
Nr Works
Nr of Extracted Features
0
50
100
150
200
250
300
350
400
0
1
2
3
4
5
6
7
8
9
12
20
378
307
196
102
56
38
22
10
2
4
1
1

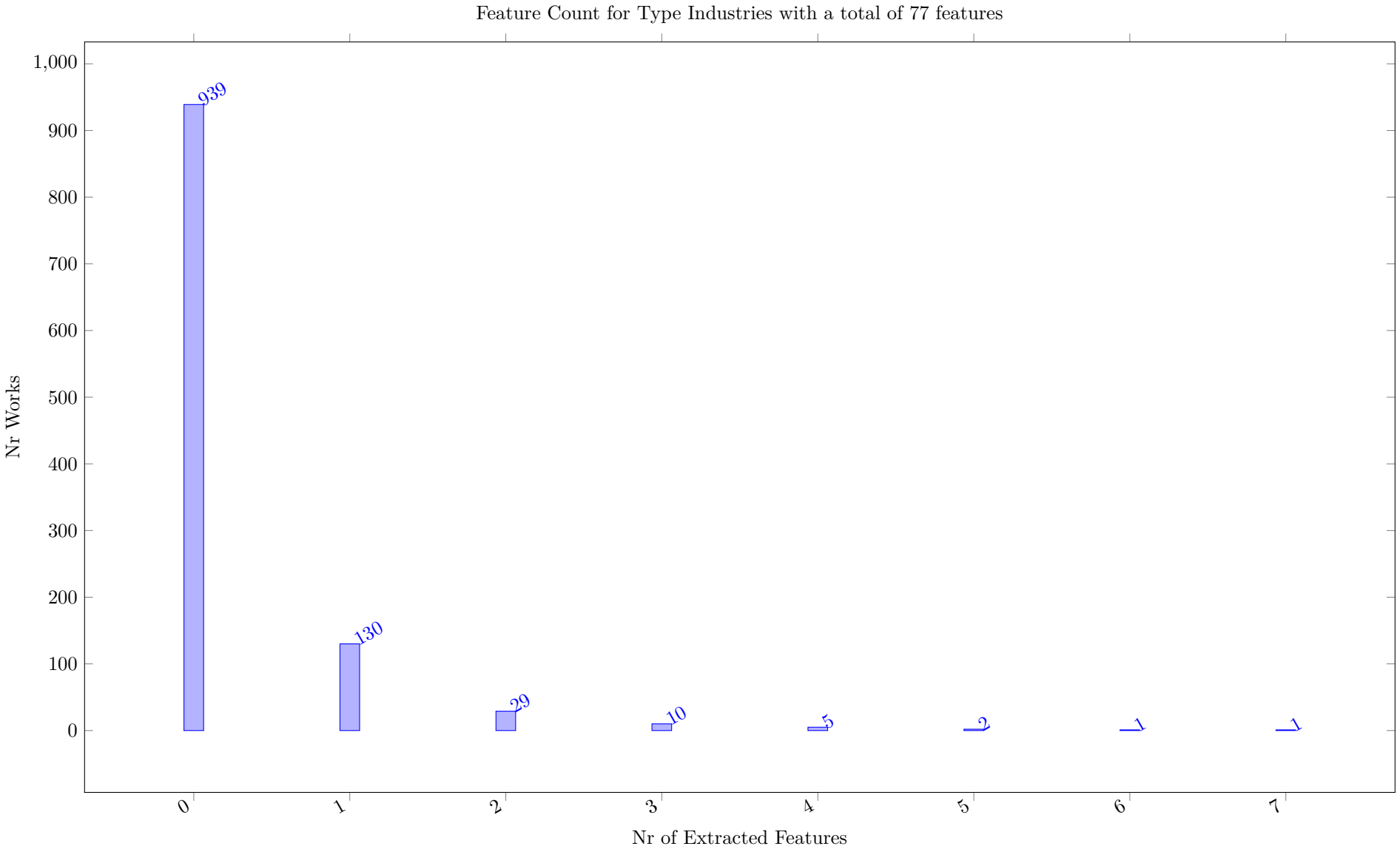

Feature Count for Type Benchmarks with a total of 16 features
Nr Works
Nr of Extracted Features
0
50
100
150
200
250
300
350
400
0
1
2
3
4
5
6
7
8
9
260
388
247
123
51
27
13
6
1
1


Feature Count for Type Classification with a total of 48 features
Nr Works
600
550
500
450
400
350
300
250
200
150
100
50
0
−50
549
226
155
111
53
9
6
5
2
1
0
1
2
3
4
5
6
7
9
11
Nr of Extracted Features


Feature Count for Type Concepts with a total of 64 features
Nr Works
Nr of Extracted Features
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 30 38
43 69 76 91 103 82 93 88 81 68 57 47 33 48 34 19 15 16 10 10 10 5 1 5 2 2 3 1 3 1 1


Feature Count for Type Constraints with a total of 63 features
Nr Works
Nr of Extracted Features
260
240
220
200
180
160
140
120
100
80
60
40
20
0
−20
207
252
249
184
109
47
24
16
13
3
3
4
3
1
2
0
1
2
3
4
5
6
7
8
9
10
11
12
14
19


Feature Count for Type CPSystems with a total of 19 features
Nr Works
0
50
100
150
200
250
300
350
257
353
269
135
48
29
10
11
3
1
1
0
1
2
3
4
5
6
7
8
9
10
Nr of Extracted Features

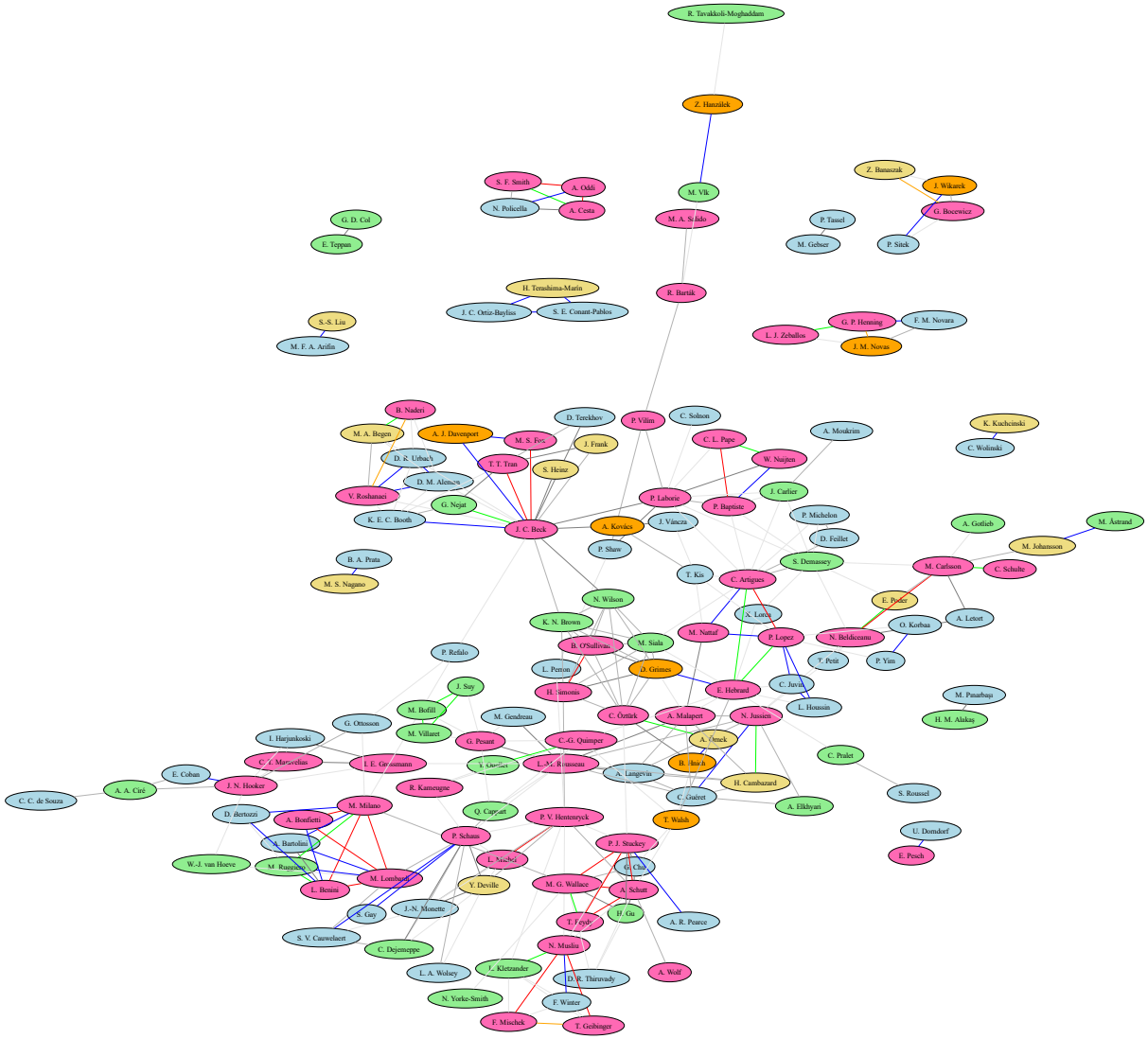

Feature Count for Type Industries with a total of 77 features
Nr Works
1,000
900
800
700
600
500
400
300
200
100
0
939
130
29
10
5
2
1
1
0
1
2
3
4
5
6
7
Nr of Extracted Features

13 Coauthor graph

The coauthor plot is created by graphviz, and is based on the coauthor relations extracted from the author fields of the works. Authors with few works (less than coauthorLimit) are not shown, to avoid a cluttered view. Note that this analysis depends on the use of canonical forms of author names. If bib entries come from many different sources, we will need to check this manually. DBLP seems to be using ORCID values and typically identifies the authors of a work with a canonical representation of their name. Accents and umlauts are other sources of having multiple forms of the name of the same author. Note that the risk of two different authors using the same name should be low for very specific literature surveys, but cannot be checked automatically with the data sources currently used.

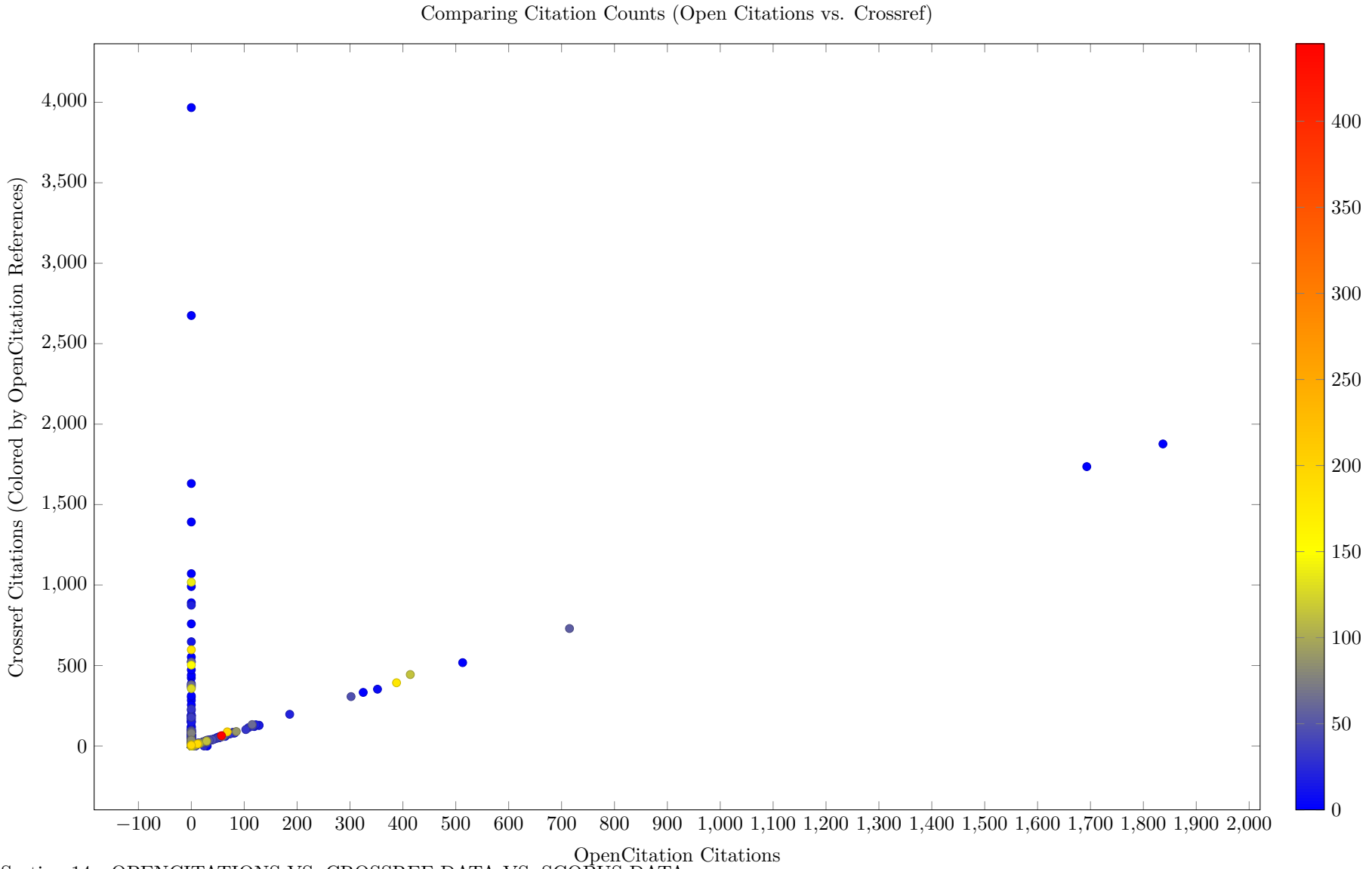
The plots can be made with different layout tools in graphviz, it seems that fdp produces the most consistent visually attractive plots for this type of display. This probably needs more work on parameter settings to be fully automated.

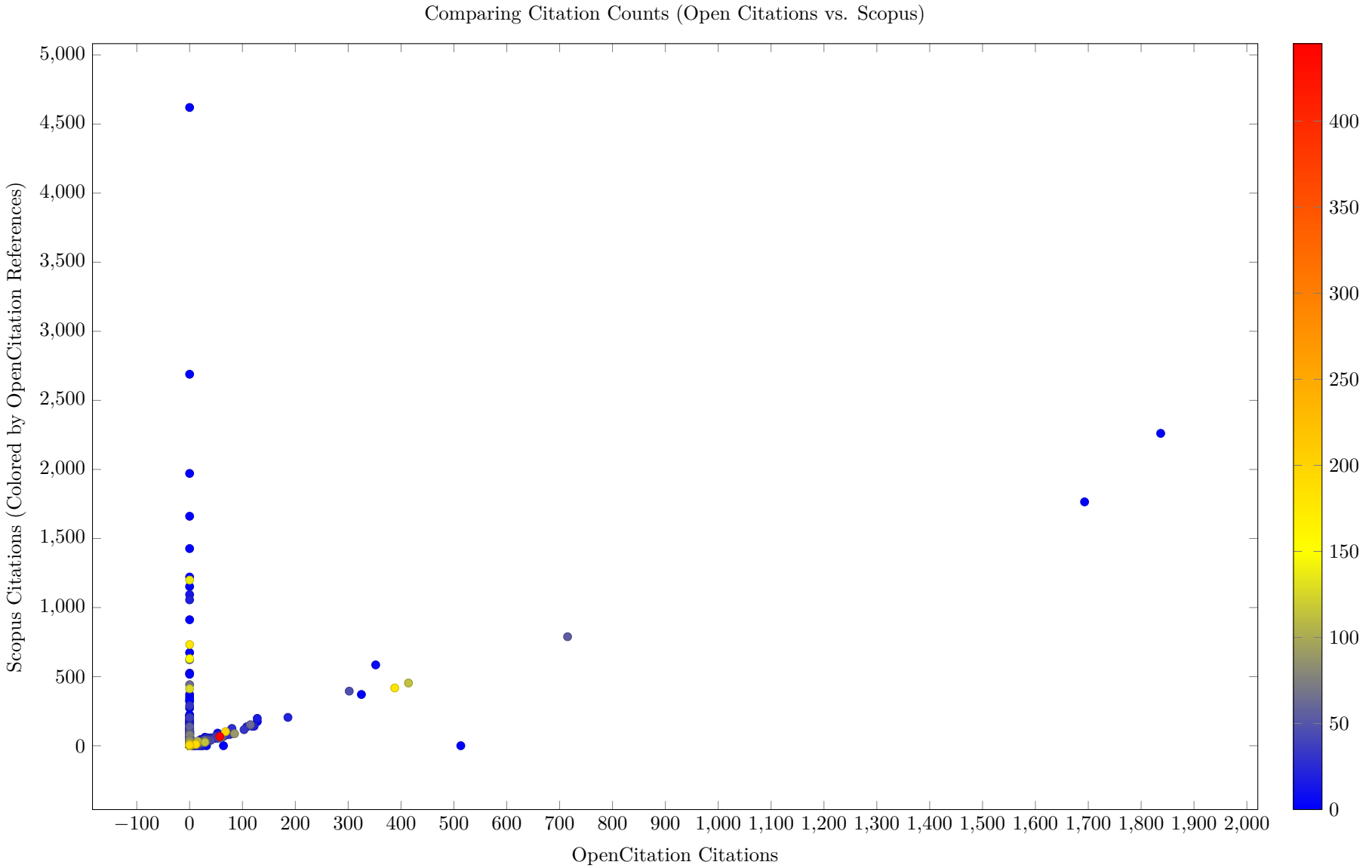
Figure 1: Coauthor Graph Drawn with fdp (Graphviz, CoauthorLimit = 4)

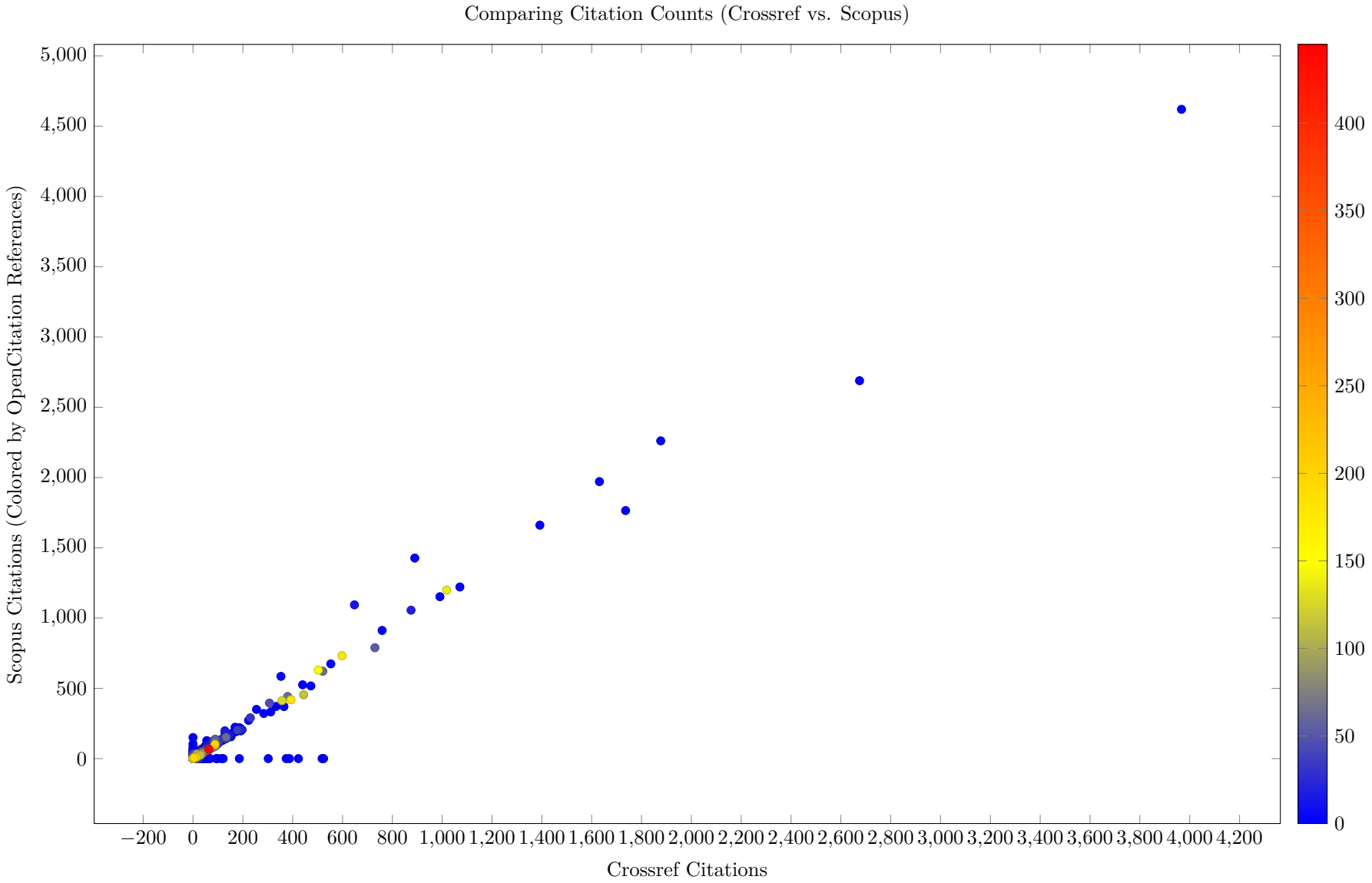


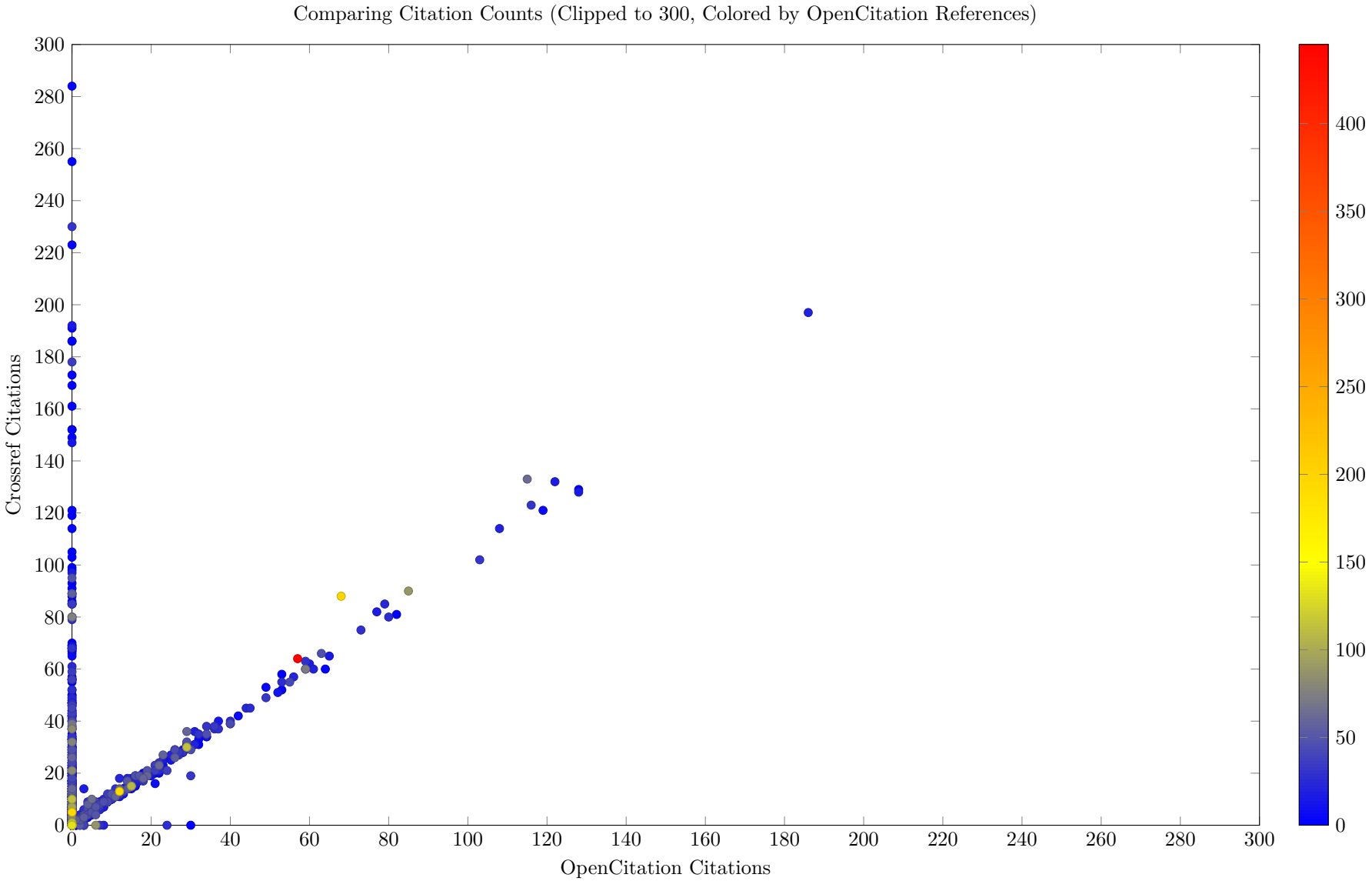
14 OpenCitations vs. Crossref Data vs. Scopus Data

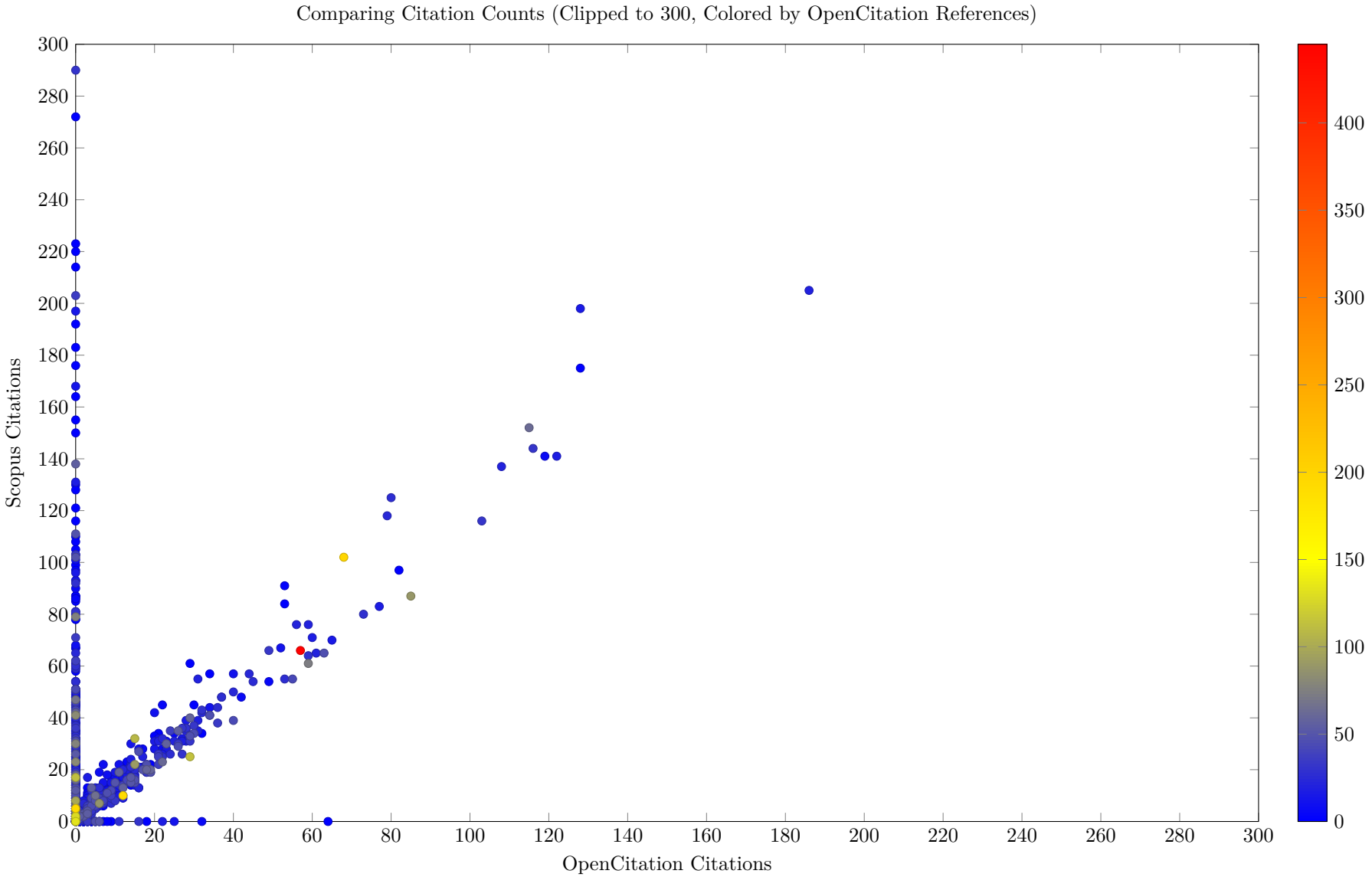
14.1 Citation Comparison

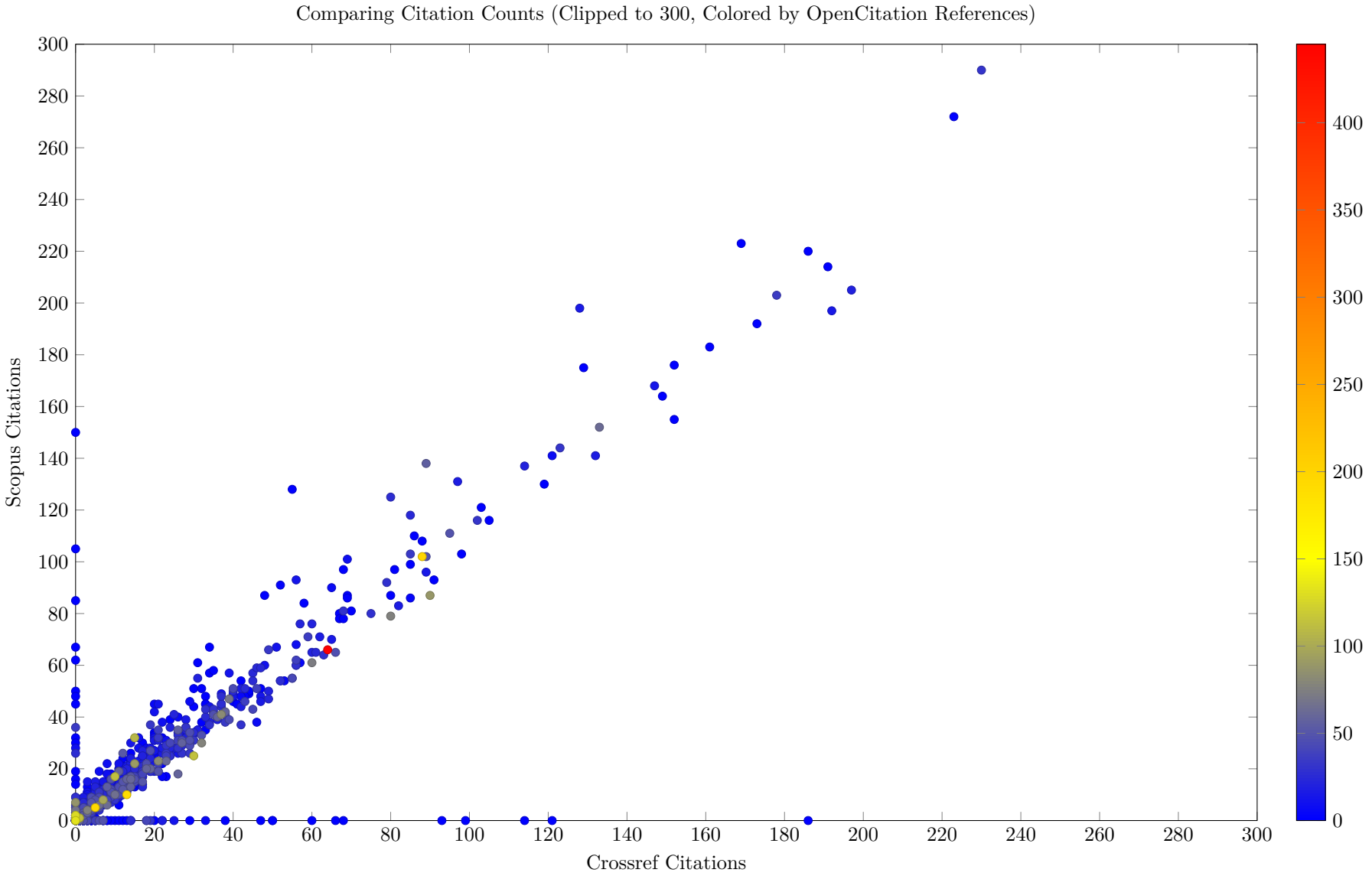



Comparing Citation Counts (Open Citations vs. Scopus)
Scopus Citations (Colored by OpenCitation References)
OpenCitation Citations
5,000
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
−100
0
100
200
300
400
500
600
700
800
900
1,000
1,100
1,200
1,300
1,400
1,500
1,600
1,700
1,800
1,900
2,000
400
350
300
250
200
150
100
50
0

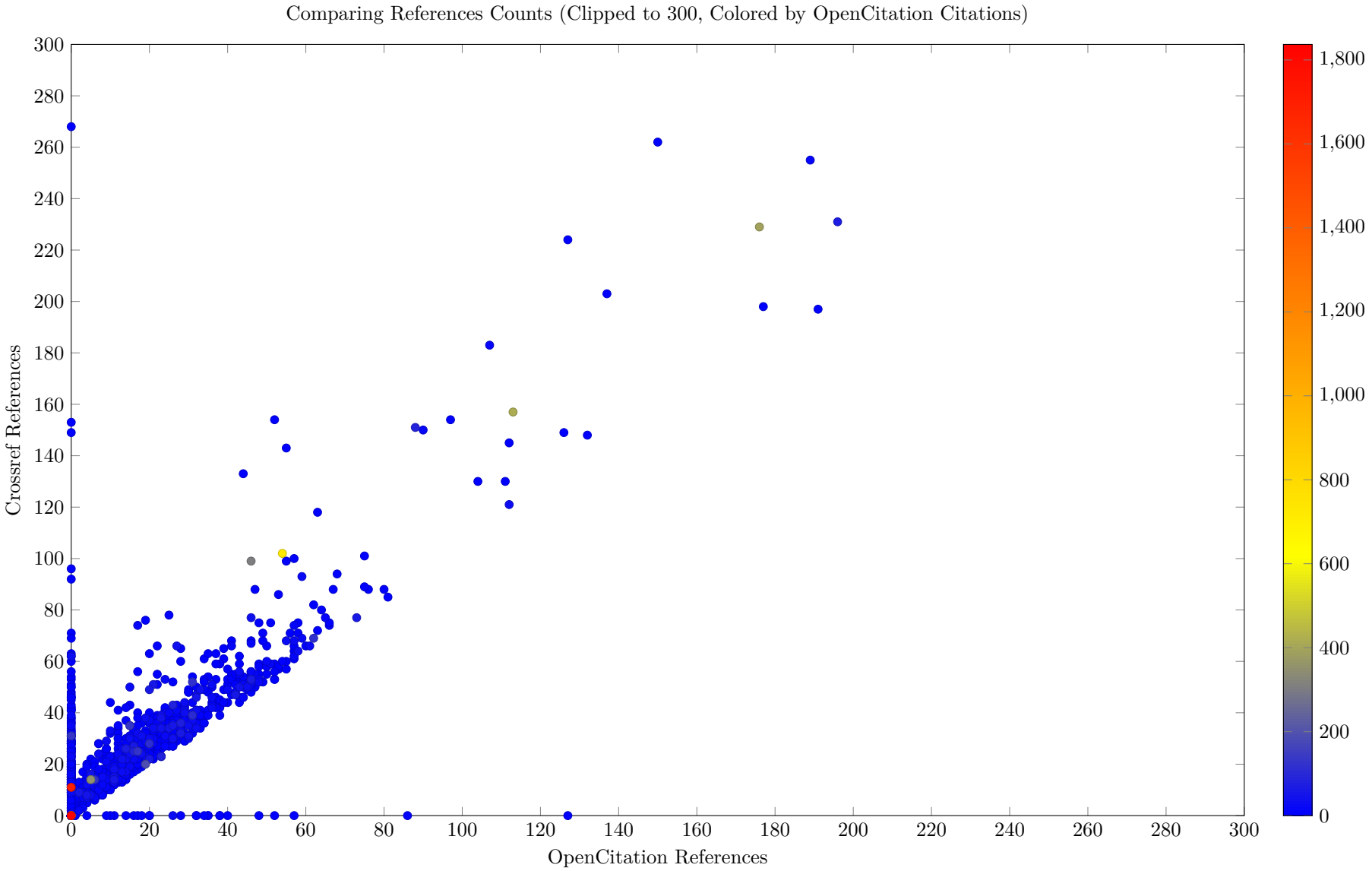

Comparing Citation Counts (Crossref vs. Scopus)
Scopus Citations (Colored by OpenCitation References)
5,000
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
−200 0 200 400 600 800 1,000 1,200 1,400 1,600 1,800 2,000 2,200 2,400 2,600 2,800 3,000 3,200 3,400 3,600 3,800 4,000 4,200
Crossref Citations
400
350
300
250
200
150
100
50
0


Comparing Citation Counts (Clipped to 300, Colored by OpenCitation References)
Crossref Citations
OpenCitation Citations
0
20
40
60
80
100
120
140
160
180
200
220
240
260
280
300
0
50
100
150
200
250
300
350
400

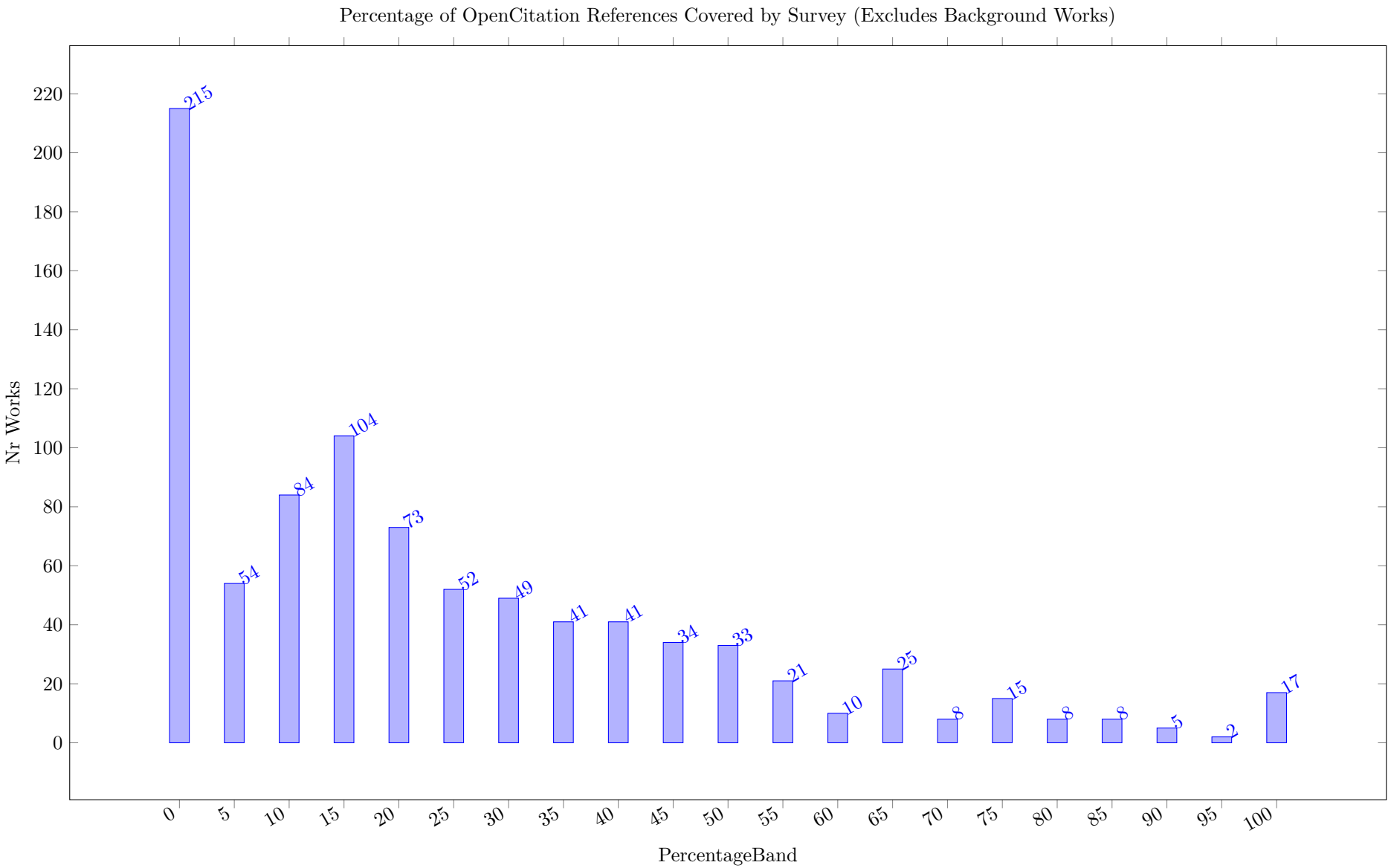

Comparing Citation Counts (Clipped to 300, Colored by OpenCitation References)
Scopus Citations
OpenCitation Citations
0
20
40
60
80
100
120
140
160
180
200
220
240
260
280
300
0
50
100
150
200
250
300
350
400

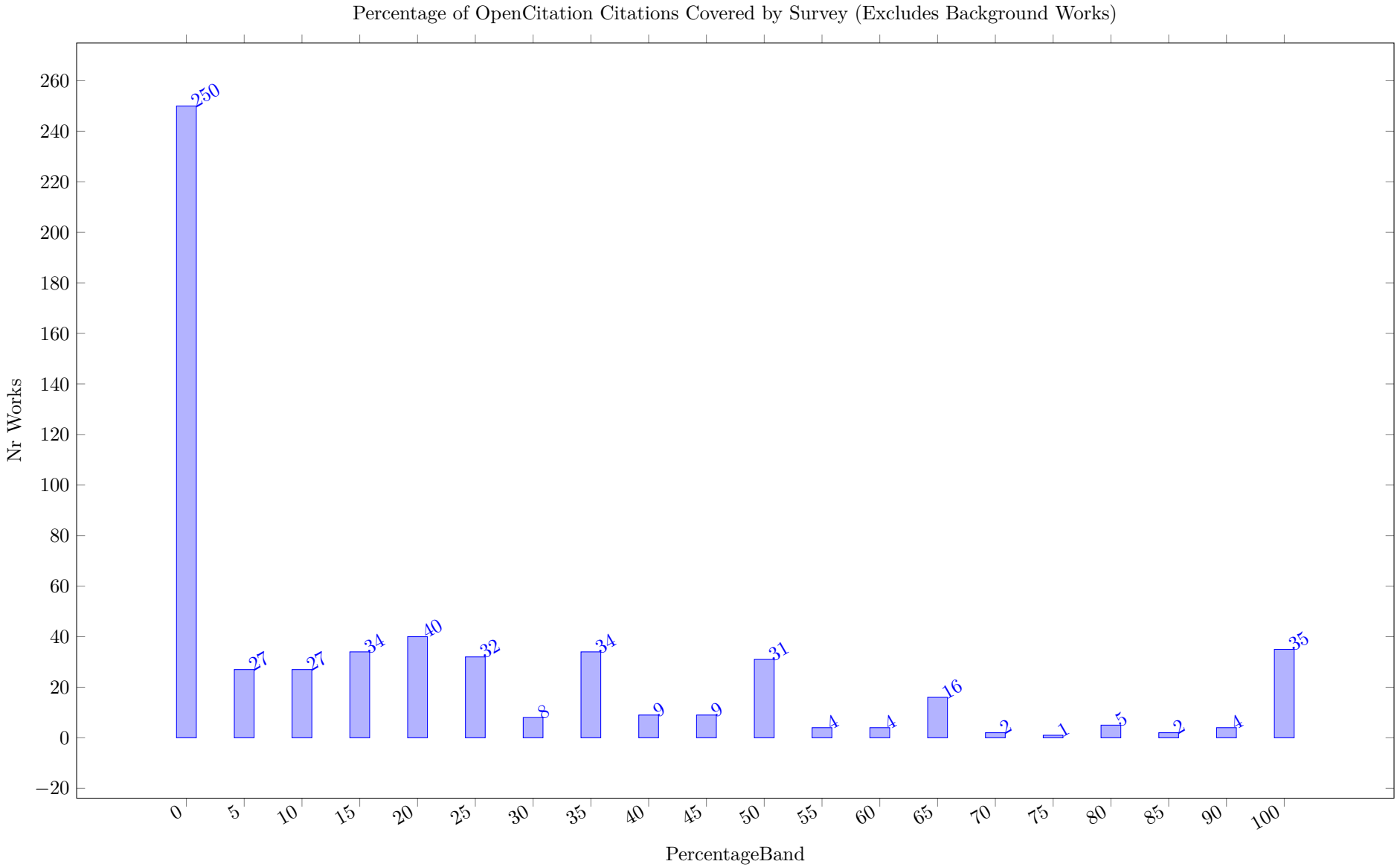

Comparing Citation Counts (Clipped to 300, Colored by OpenCitation References)
Scopus Citations
Crossref Citations
0
20
40
60
80
100
120
140
160
180
200
220
240
260
280
300
0
50
100
150
200
250
300
350
400

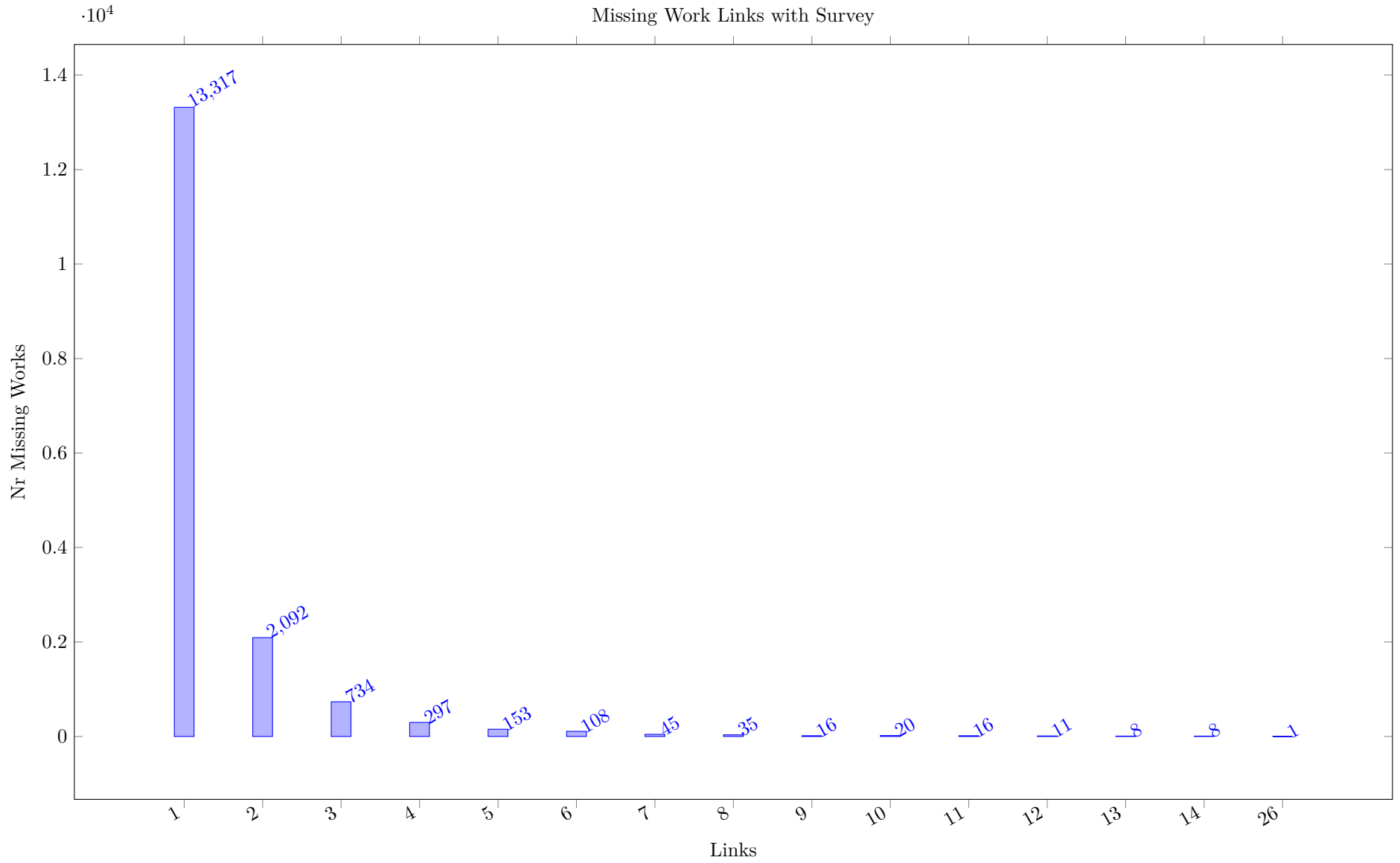
14.2 References Comparison



14.3 Percentage Cover




Percentage of OpenCitation Citations Covered by Survey (Excludes Background Works)
Nr Works
PercentageBand
260
240
220
200
180
160
140
120
100
80
60
40
20
0
−20
0
5
10
15
20
25
30
35
40
45
50
55
60
65
70
75
80
85
90
100
250
27
27
34
40
32
8
34
9
9
31
4
4
16
2
1
5
2
4
35


Missing Work Links with Survey
$\cdot 10^4$
Nr Missing Works
1.4
1.2
1
0.8
0.6
0.4
0.2
0
13,317
2,092
734
297
153
108
45
35
16
20
16
11
8
8
1
1
2
3
4
5
6
7
8
9
10
11
12
13
14
26
Links

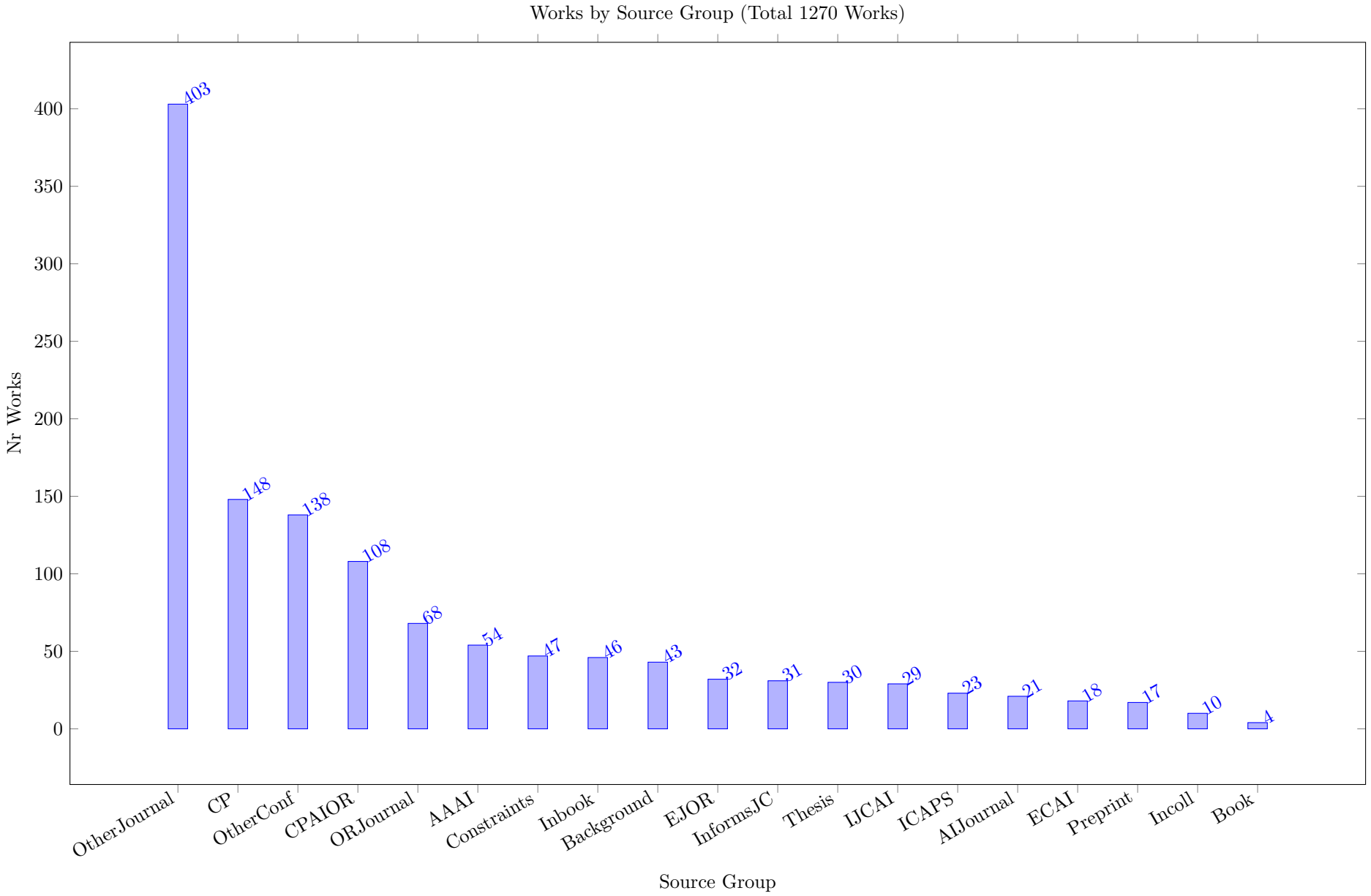
15 Citations by Year and Source Group

We have defined a number of source groups to group publications of a given type together, without using the full conference series and journal distinctions for grouping. The following table lists all defined source groups for this survey. Adding groups requires updates to the source code.

Table 13: Source Groups

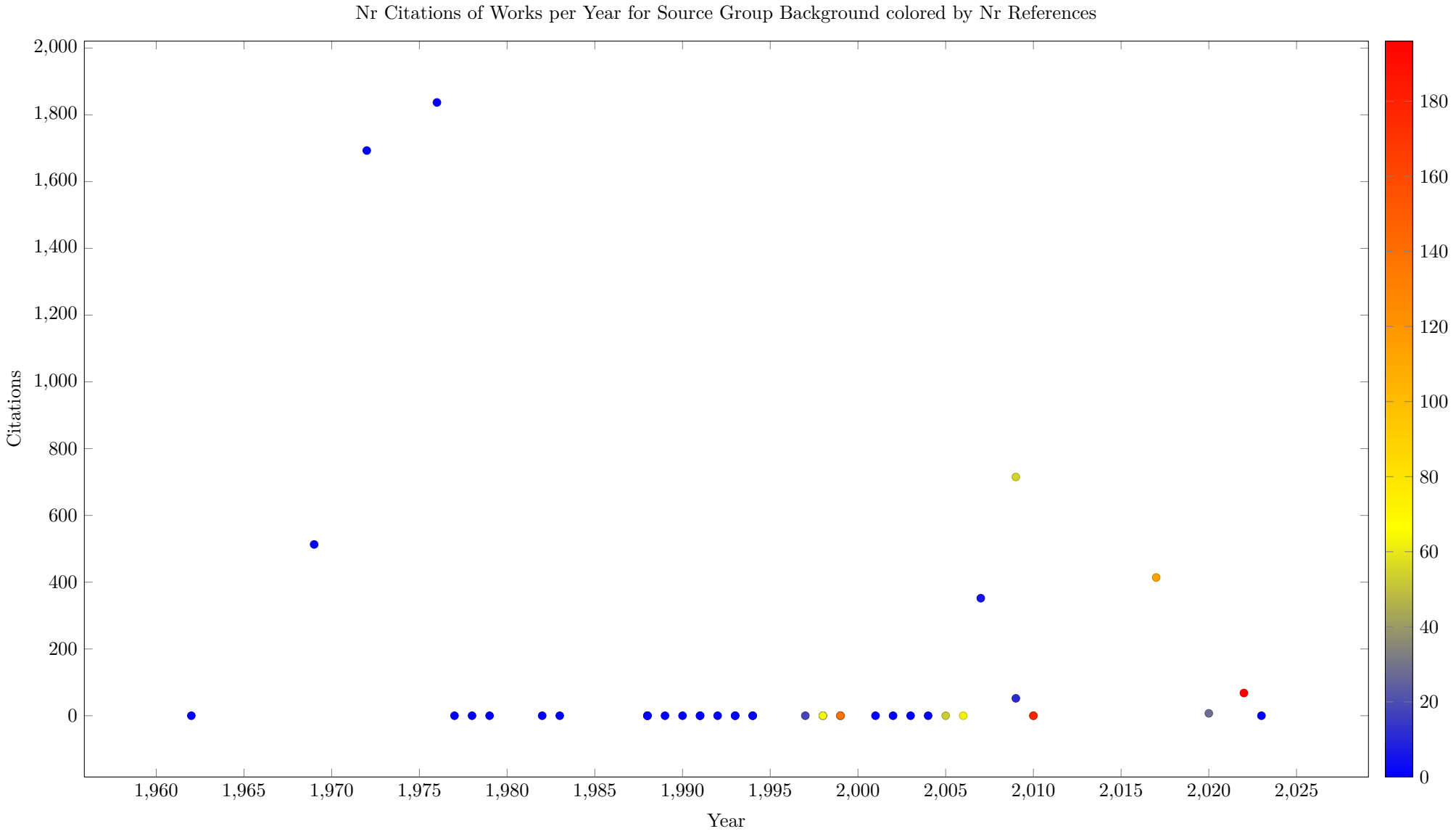
Name	Description
Background	Background material
CP	The CP conference (from 1995)
CPAIOR	The CPAIOR conference (starting 2004)
ICAPS	The ICAPS conference
AAAI	AAAI conference
IJCAI	IJCAI Conference
ECAI	ECAI Conference
OtherConf	Any other conference
Constraints	The Constraint Journal
EJOR	The European Journal on Operations Research
InformsJC	The Informs Journal on Computing
AIJournal	Other AI Journals
ORJournal	Other OR Journals
JoPR	Journal of Peace Research
JoCR	Journal of Conflict Resolution
CMPS	Conflict Management and Piece Science
Preprint	A non reviewed preprint
OtherJournal	Any other Journal
Book	A book
Inbook	Chapter in a Book
Incoll	Chapter in a Collection
Thesis	A thesis
Other	Any other published work

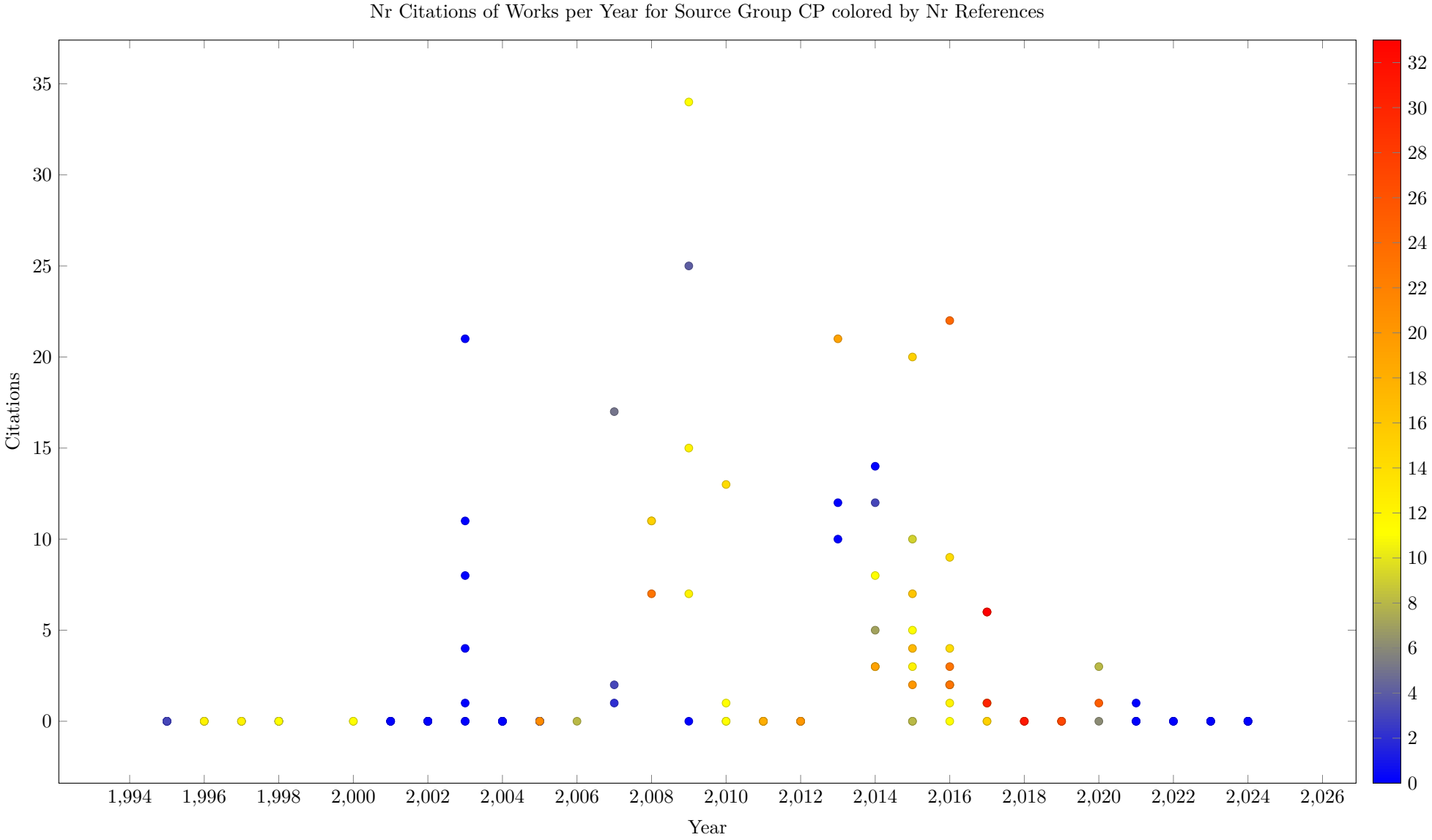
The first plot in this section shows how many works in each source group have been published. This considers the complete time period of the survey.

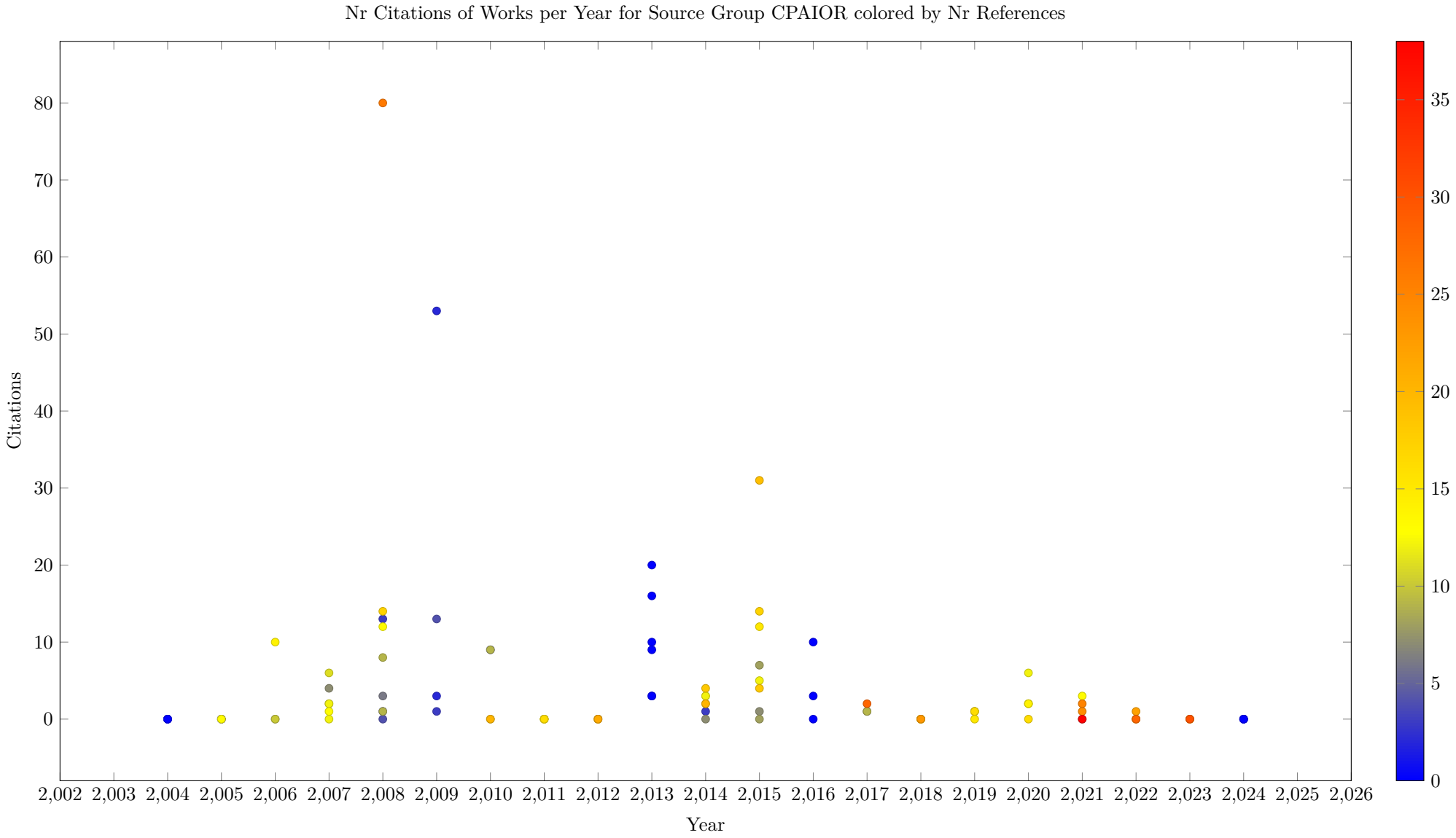

Works by Source Group (Total 1270 Works)
Nr Works
0
50
100
150
200
250
300
350
400
403
148
138
108
68
54
47
46
43
32
31
30
29
23
21
18
17
10
4
OtherJournal
CP
OtherConf
CPAIOR
ORJournal
AAAI
Constraints
Inbook
Background
EJOR
InformsJC
Thesis
IJCAI
ICAPS
AIJournal
ECAI
Preprint
Incoll
Book
Source Group

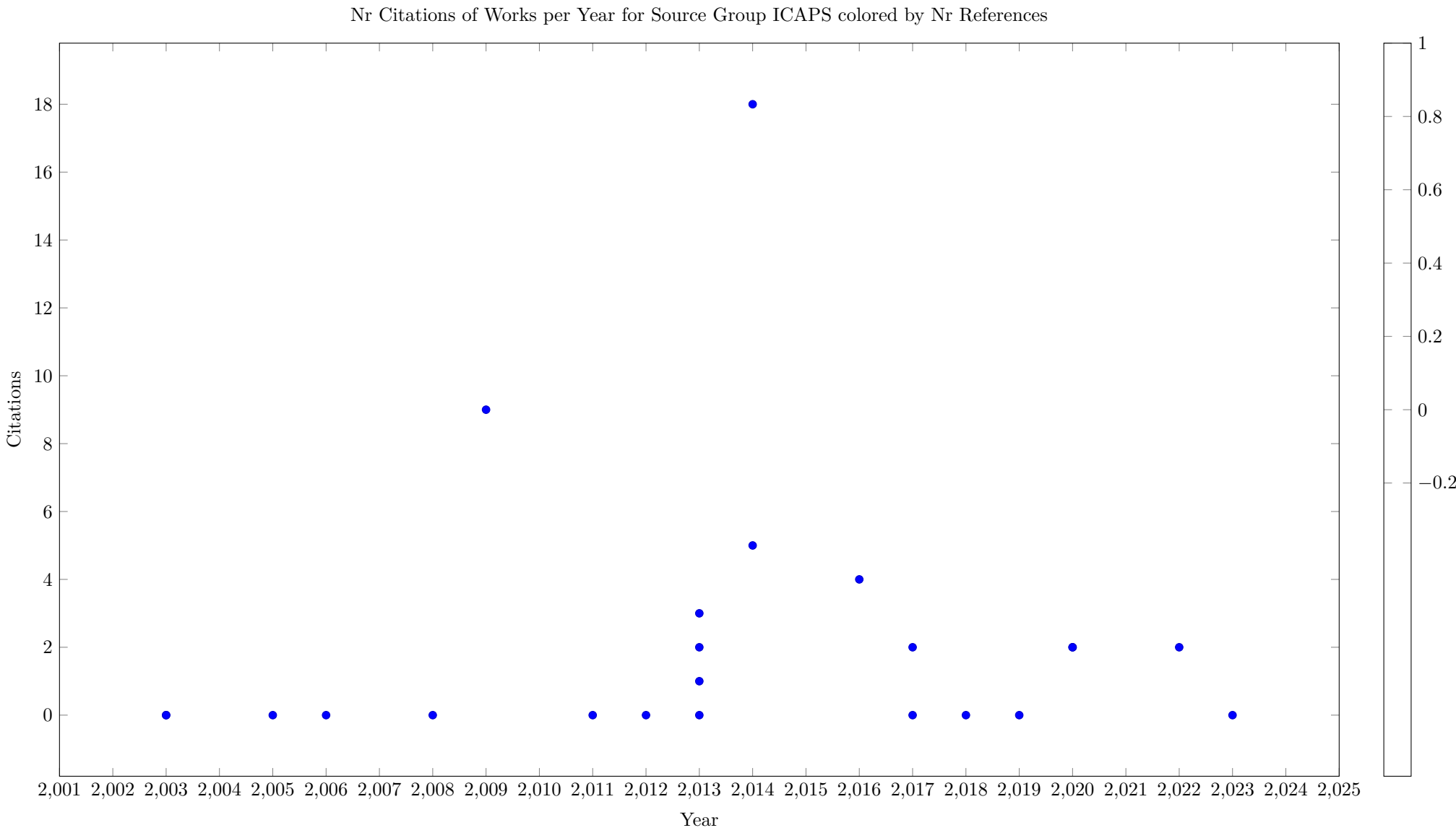
15.1 Source Group Citations by Year

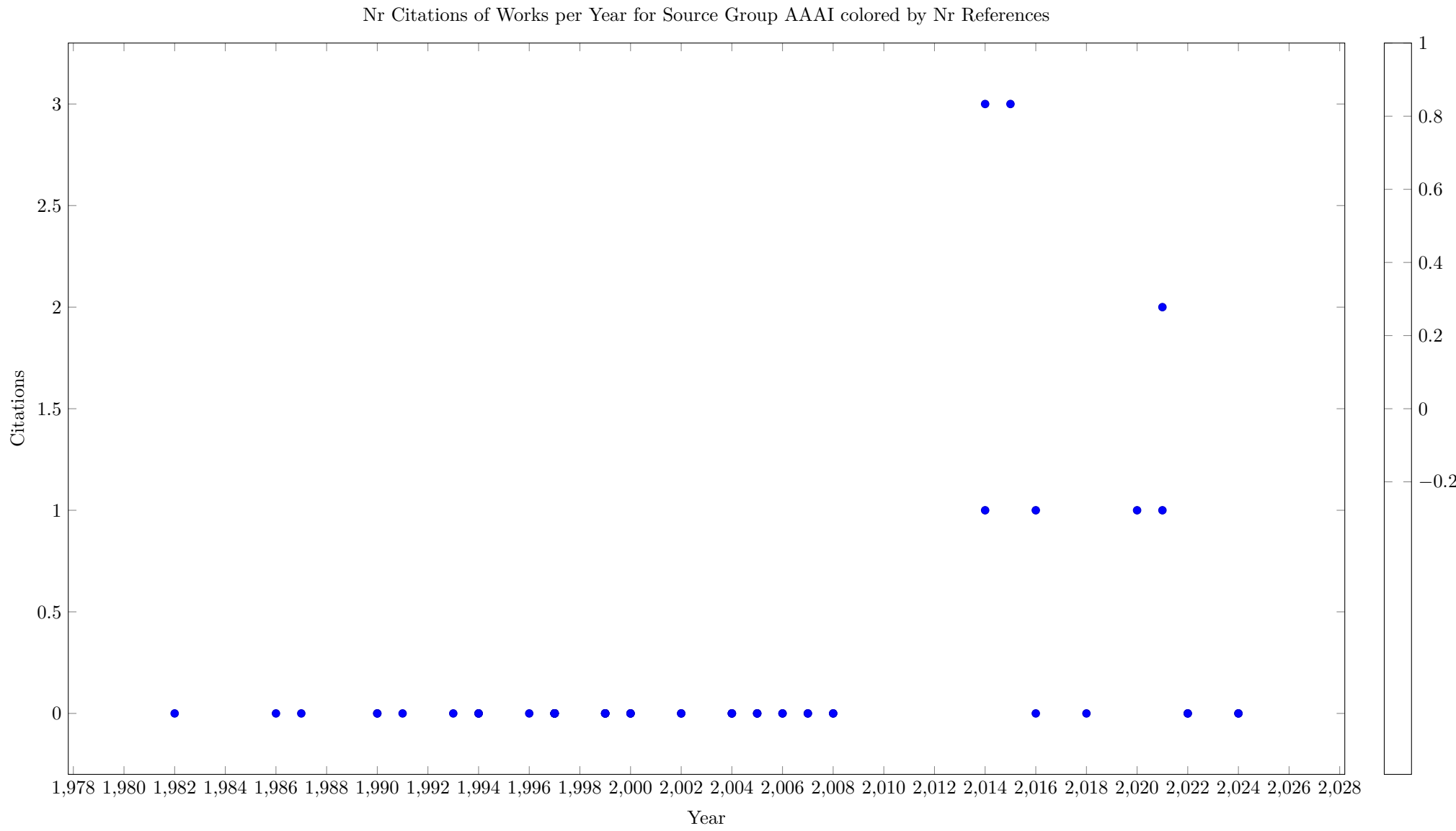
We plot for each source group the number of citations obtained by papers published in a given year. This plot gives both an indication in which period the source group was active, and how significant the works in the source are. It is of course natural that more recent papers have fewer citations than papers published many tears ago.

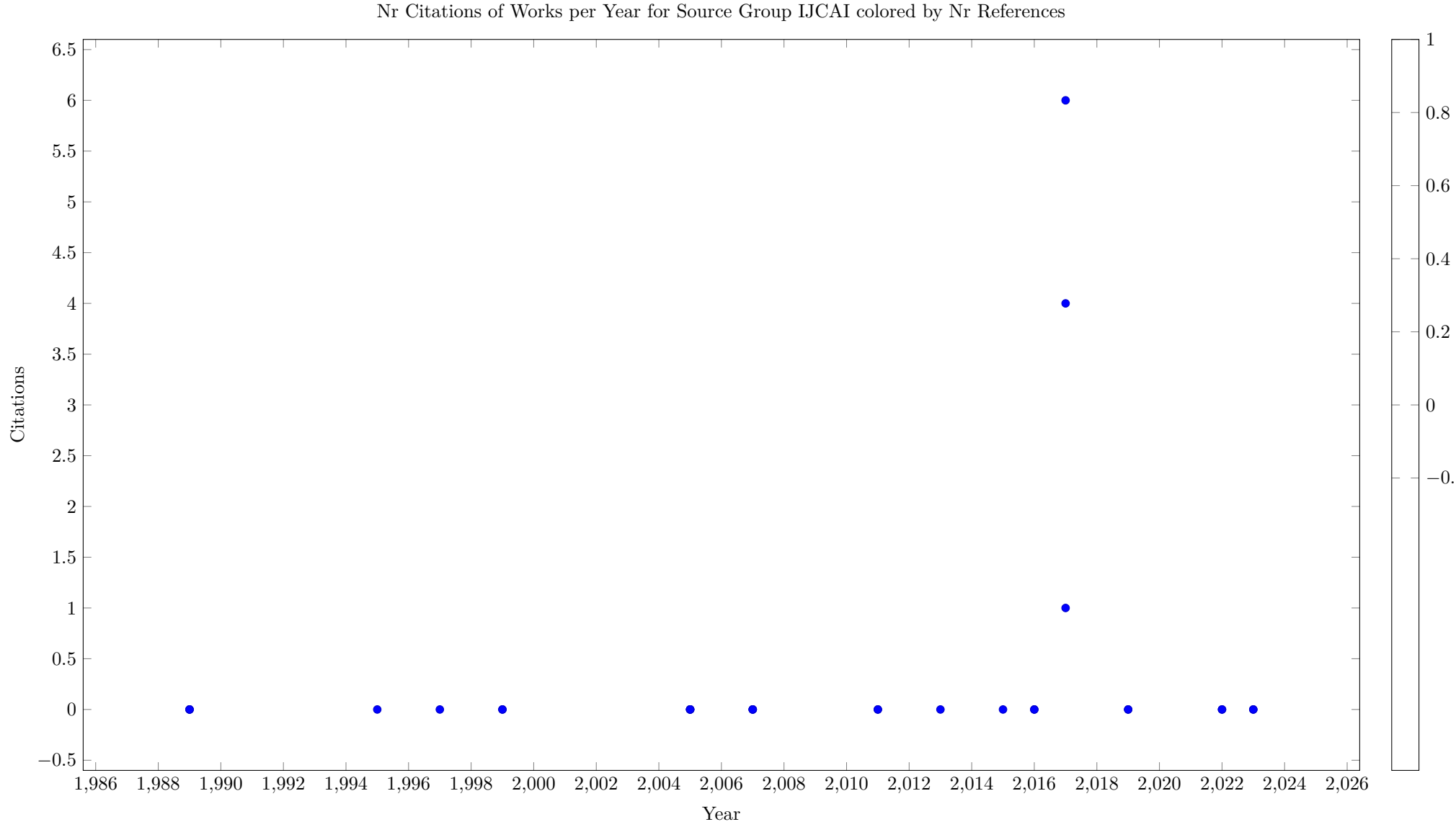

Nr Citations of Works per Year for Source Group Background colored by Nr References
Citations
2,000
1,800
1,600
1,400
1,200
1,000
800
600
400
200
0
1,960
1,965
1,970
1,975
1,980
1,985
1,990
1,995
2,000
2,005
2,010
2,015
2,020
2,025
Year
180
160
140
120
100
80
60
40
20
0

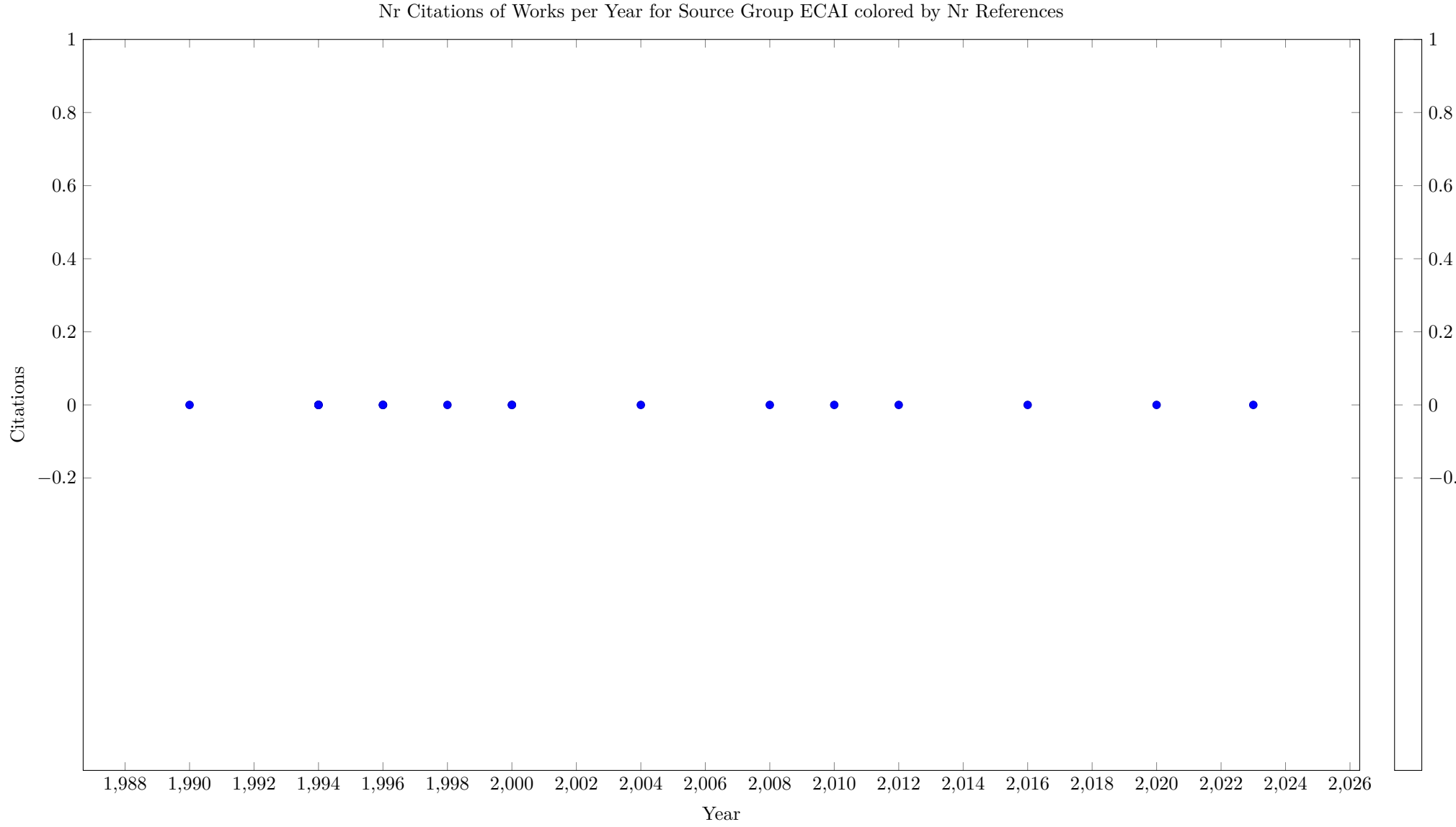

Nr Citations of Works per Year for Source Group CP colored by Nr References
Citations
0
5
10
15
20
25
30
35
Year
1,994
1,996
1,998
2,000
2,002
2,004
2,006
2,008
2,010
2,012
2,014
2,016
2,018
2,020
2,022
2,024
2,026
0
2
4
6
8
10
12
14
16
18
20
22
24
26
28
30
32

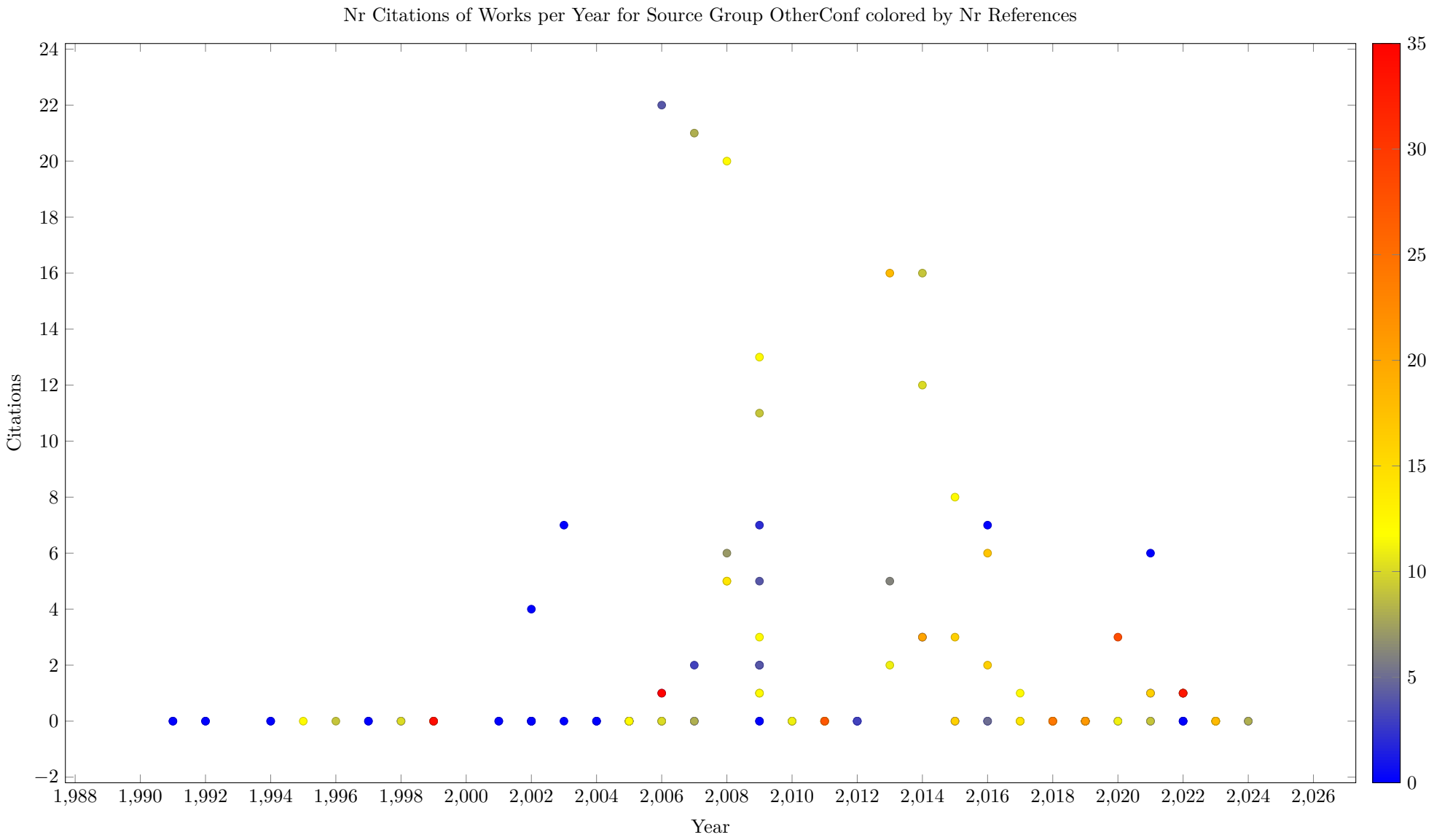

Nr Citations of Works per Year for Source Group CPAIOR colored by Nr References
Citations
0
10
20
30
40
50
60
70
80
Year
2,002
2,003
2,004
2,005
2,006
2,007
2,008
2,009
2,010
2,011
2,012
2,013
2,014
2,015
2,016
2,017
2,018
2,019
2,020
2,021
2,022
2,023
2,024
2,025
2,026
0
5
10
15
20
25
30
35

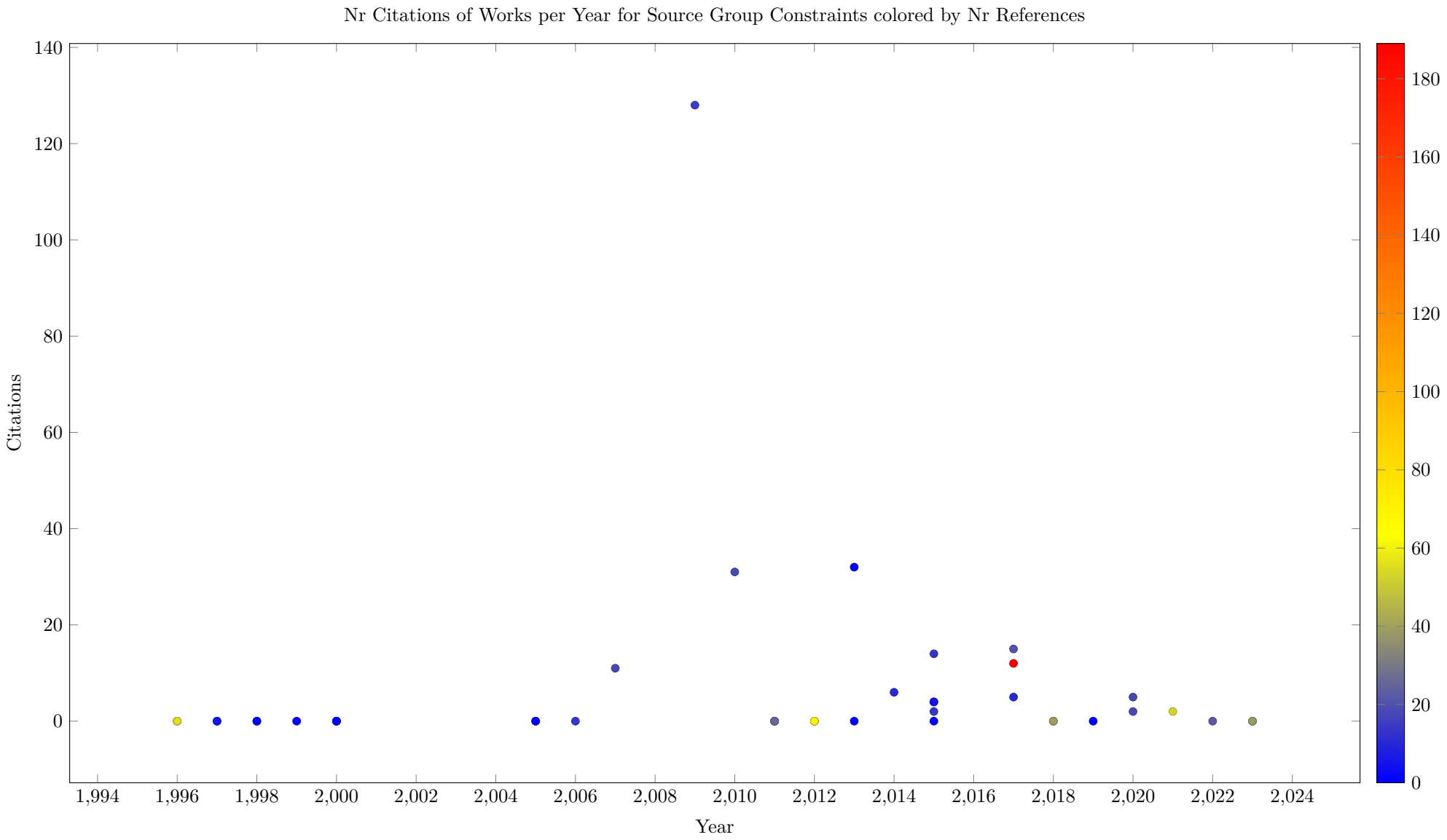

Nr Citations of Works per Year for Source Group ICAPS colored by Nr References
Citations
0
2
4
6
8
10
12
14
16
18
Year
2,001 2,002 2,003 2,004 2,005 2,006 2,007 2,008 2,009 2,010 2,011 2,012 2,013 2,014 2,015 2,016 2,017 2,018 2,019 2,020 2,021 2,022 2,023 2,024 2,025
1
0.8
0.6
0.4
0.2
0
−0.2

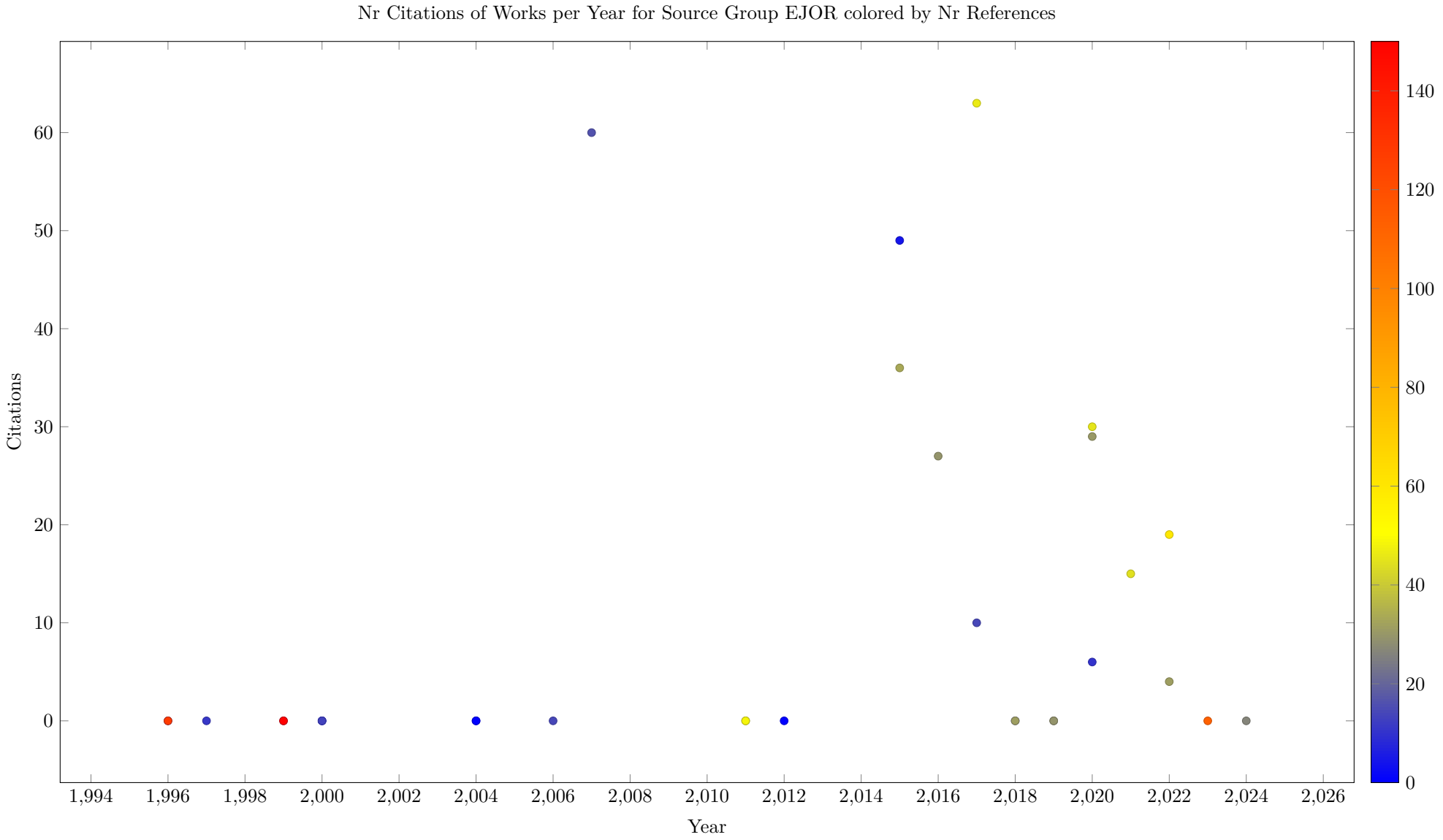

Nr Citations of Works per Year for Source Group AAAI colored by Nr References
Citations
0
0.5
1
1.5
2
2.5
3
Year
1,978 1,980 1,982 1,984 1,986 1,988 1,990 1,992 1,994 1,996 1,998 2,000 2,002 2,004 2,006 2,008 2,010 2,012 2,014 2,016 2,018 2,020 2,022 2,024 2,026 2,028
1
0.8
0.6
0.4
0.2
0
−0.2

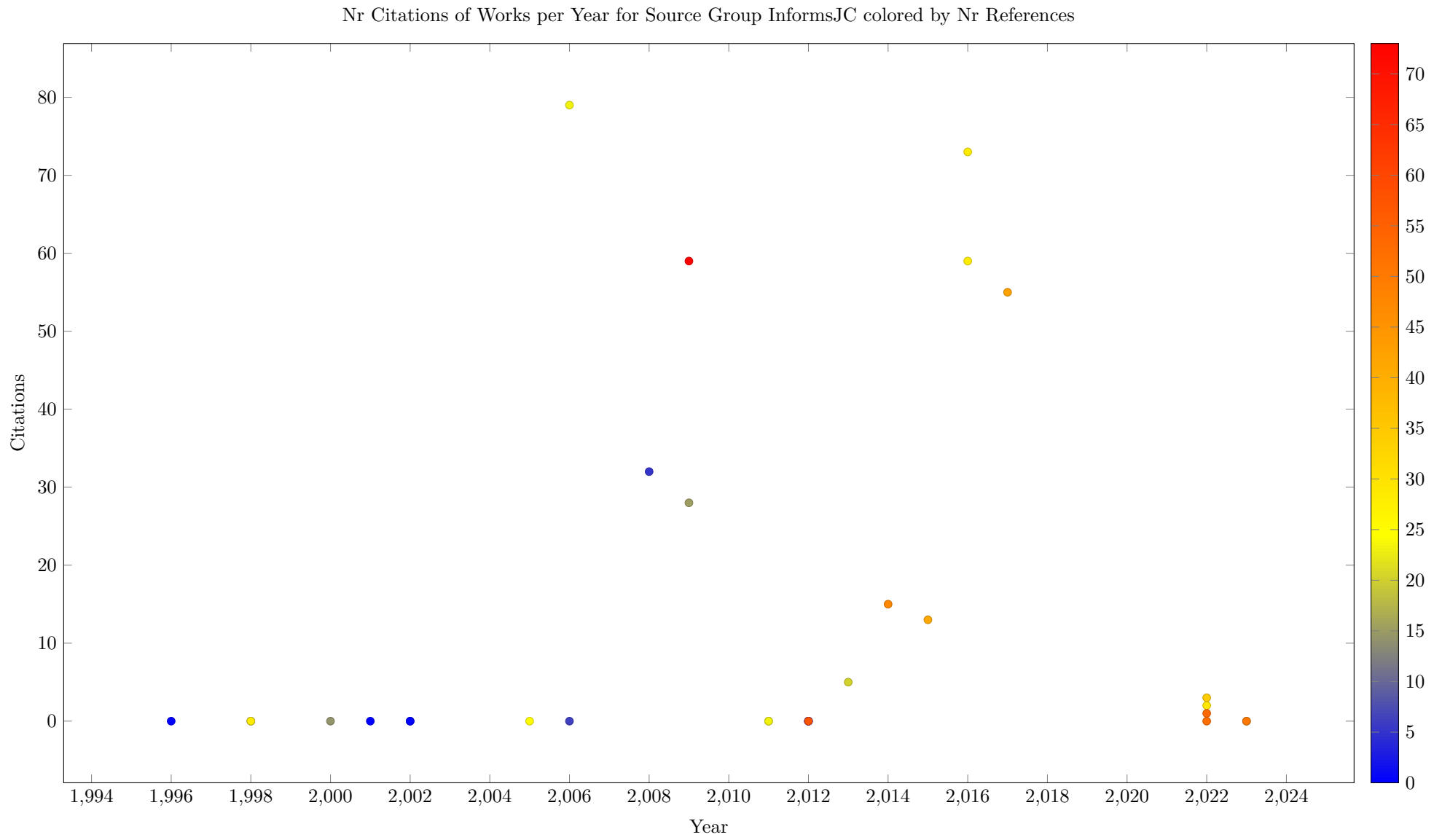

Nr Citations of Works per Year for Source Group IJCAI colored by Nr References
Citations
6.5
6
5.5
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
−0.5
1,986
1,988
1,990
1,992
1,994
1,996
1,998
2,000
2,002
2,004
2,006
2,008
2,010
2,012
2,014
2,016
2,018
2,020
2,022
2,024
2,026
Year
1
0.8
0.6
0.4
0.2
0
−0.

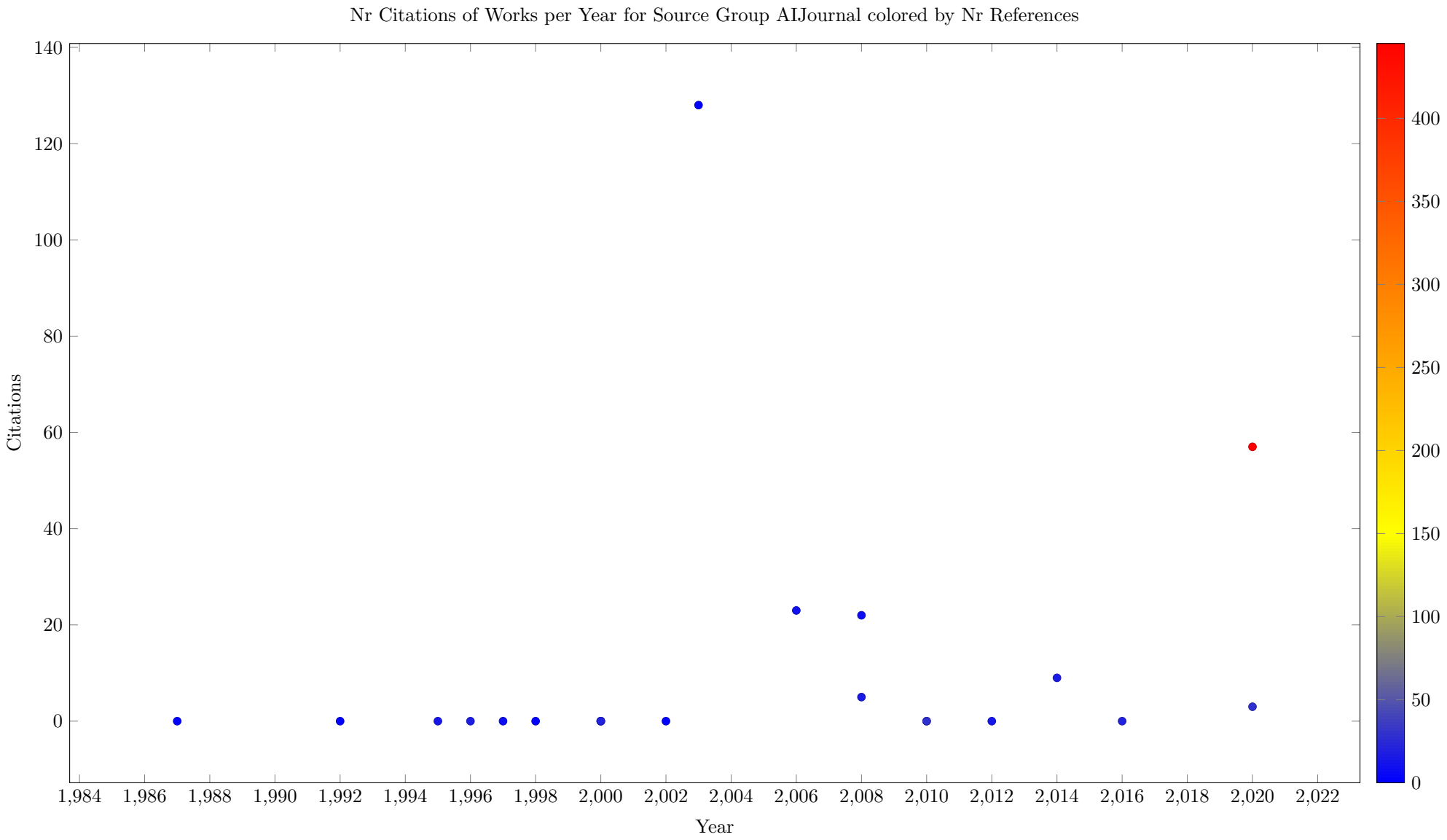

Nr Citations of Works per Year for Source Group ECAI colored by Nr References
Citations
1
0.8
0.6
0.4
0.2
0
−0.2
1,988
1,990
1,992
1,994
1,996
1,998
2,000
2,002
2,004
2,006
2,008
2,010
2,012
2,014
2,016
2,018
2,020
2,022
2,024
2,026
Year

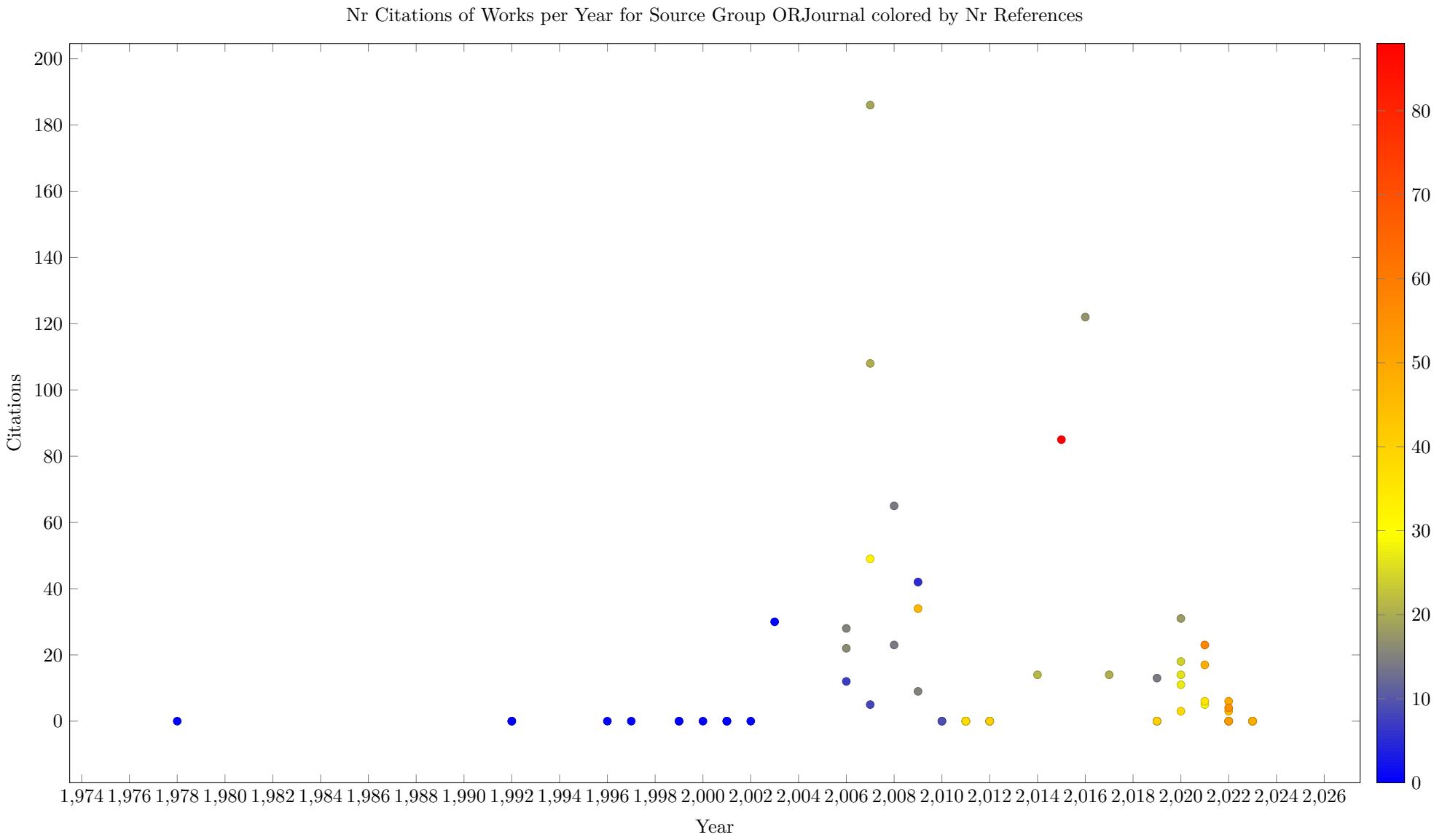

Nr Citations of Works per Year for Source Group OtherConf colored by Nr References
Citations
Year
24
22
20
18
16
14
12
10
8
6
4
2
0
−2
1,988
1,990
1,992
1,994
1,996
1,998
2,000
2,002
2,004
2,006
2,008
2,010
2,012
2,014
2,016
2,018
2,020
2,022
2,024
2,026
35
30
25
20
15
10
5
0

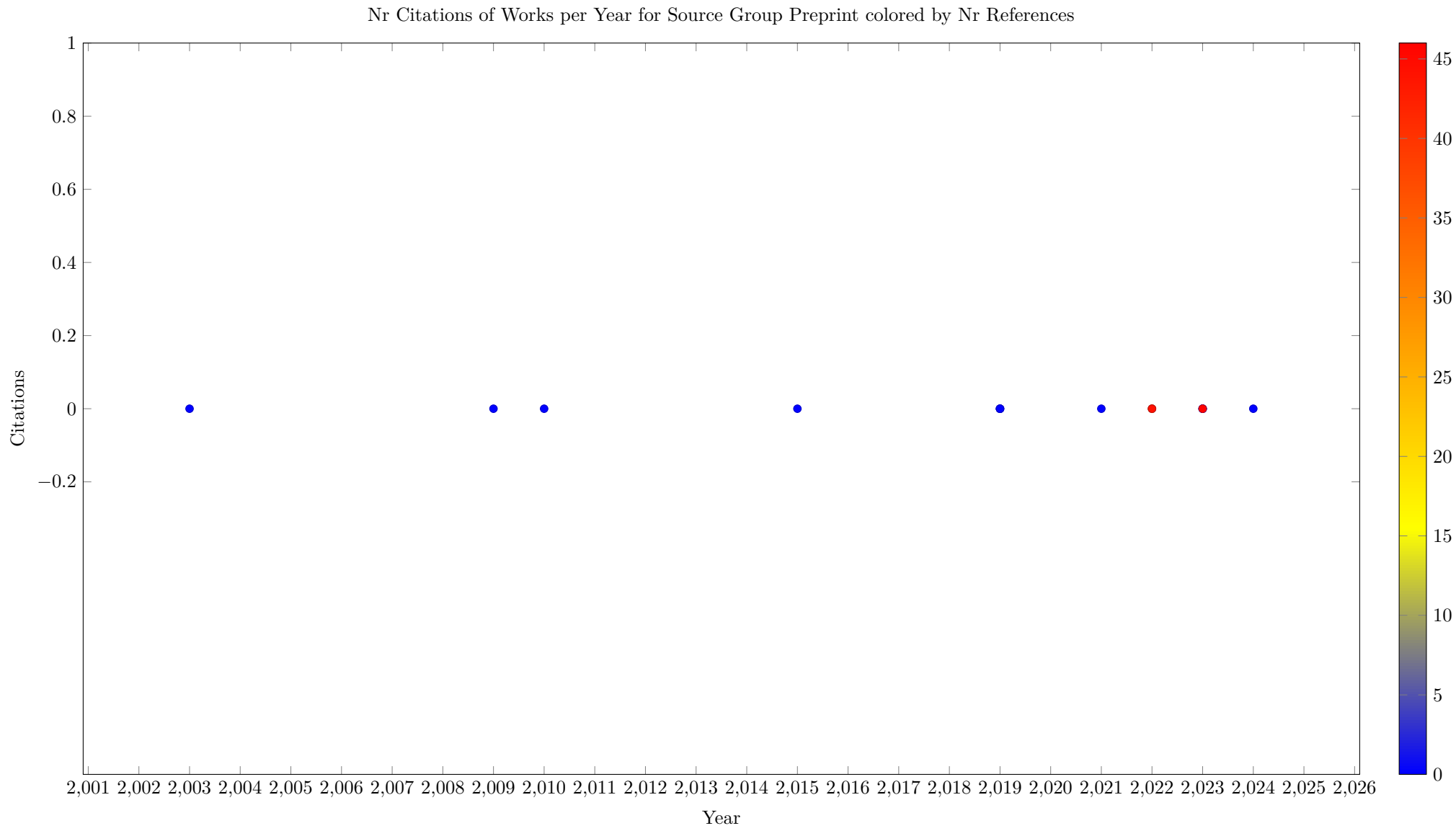

Nr Citations of Works per Year for Source Group Constraints colored by Nr References
Citations
Year
0
20
40
60
80
100
120
140
1,994
1,996
1,998
2,000
2,002
2,004
2,006
2,008
2,010
2,012
2,014
2,016
2,018
2,020
2,022
2,024
0
20
40
60
80
100
120
140
160
180

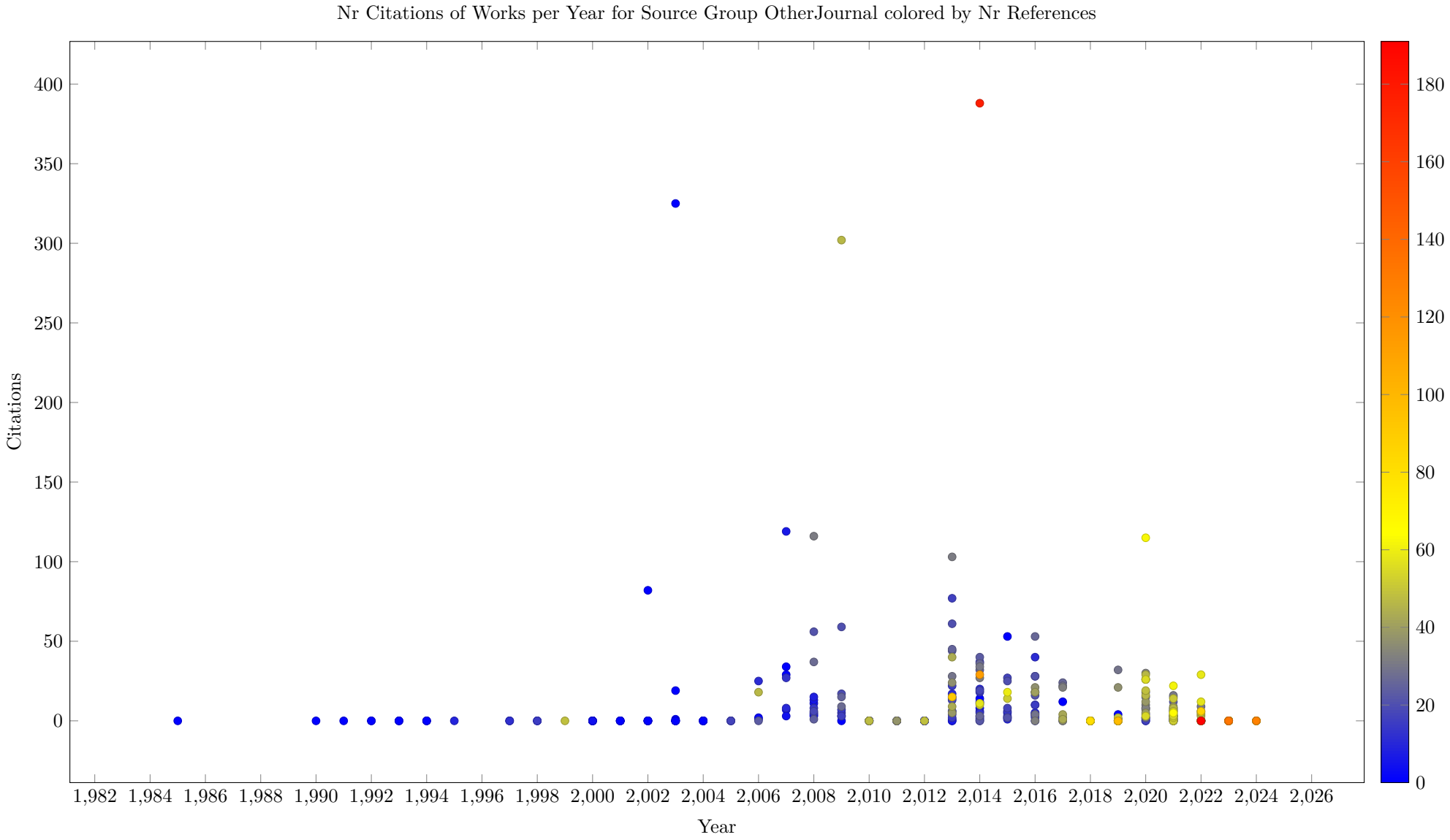

Nr Citations of Works per Year for Source Group EJOR colored by Nr References
Citations
0
10
20
30
40
50
60
Year
1,994
1,996
1,998
2,000
2,002
2,004
2,006
2,008
2,010
2,012
2,014
2,016
2,018
2,020
2,022
2,024
2,026
0
20
40
60
80
100
120
140

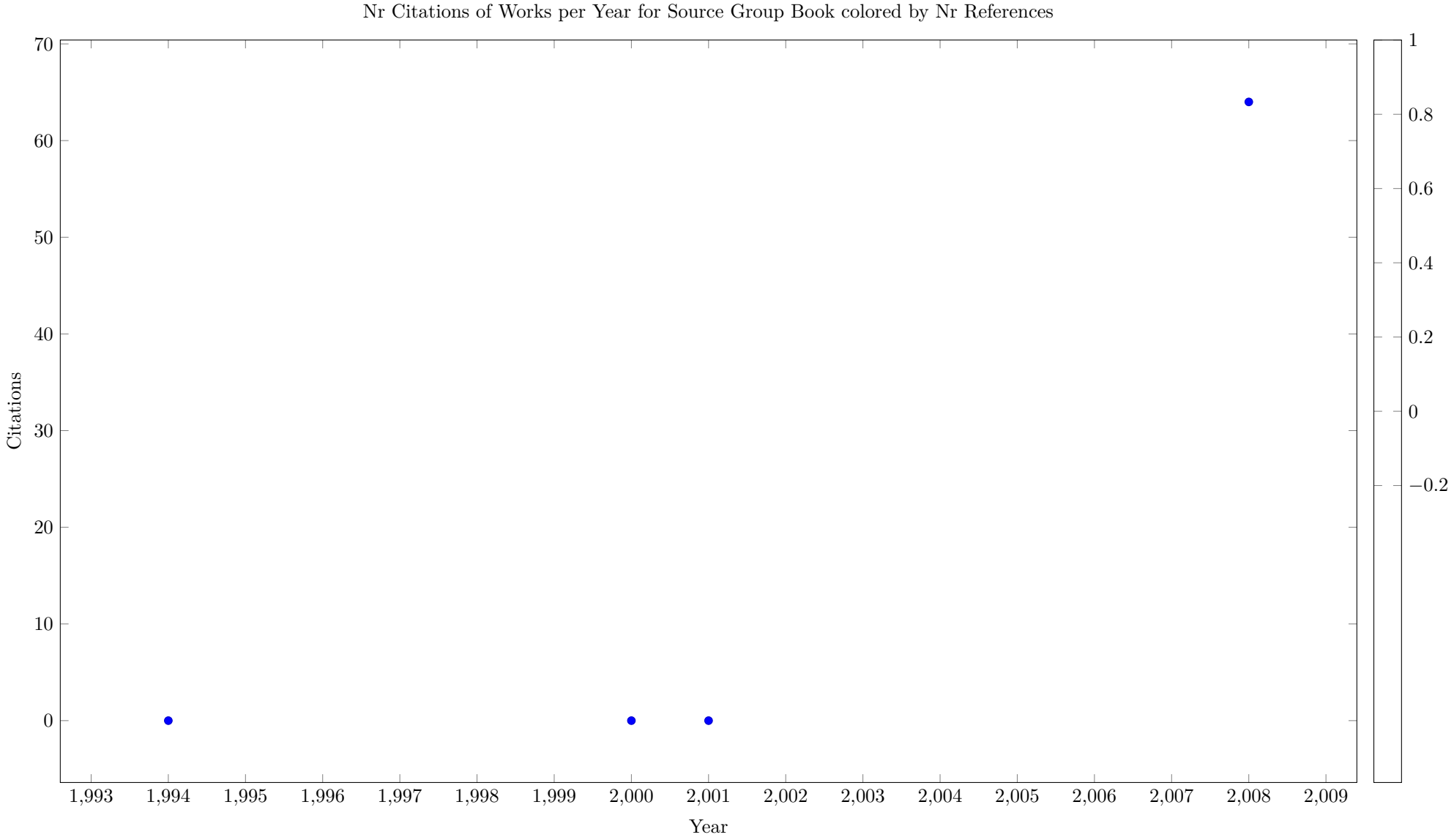

Nr Citations of Works per Year for Source Group InformsJC colored by Nr References
Citations
0
10
20
30
40
50
60
70
80
Year
1,994
1,996
1,998
2,000
2,002
2,004
2,006
2,008
2,010
2,012
2,014
2,016
2,018
2,020
2,022
2,024
0
5
10
15
20
25
30
35
40
45
50
55
60
65
70

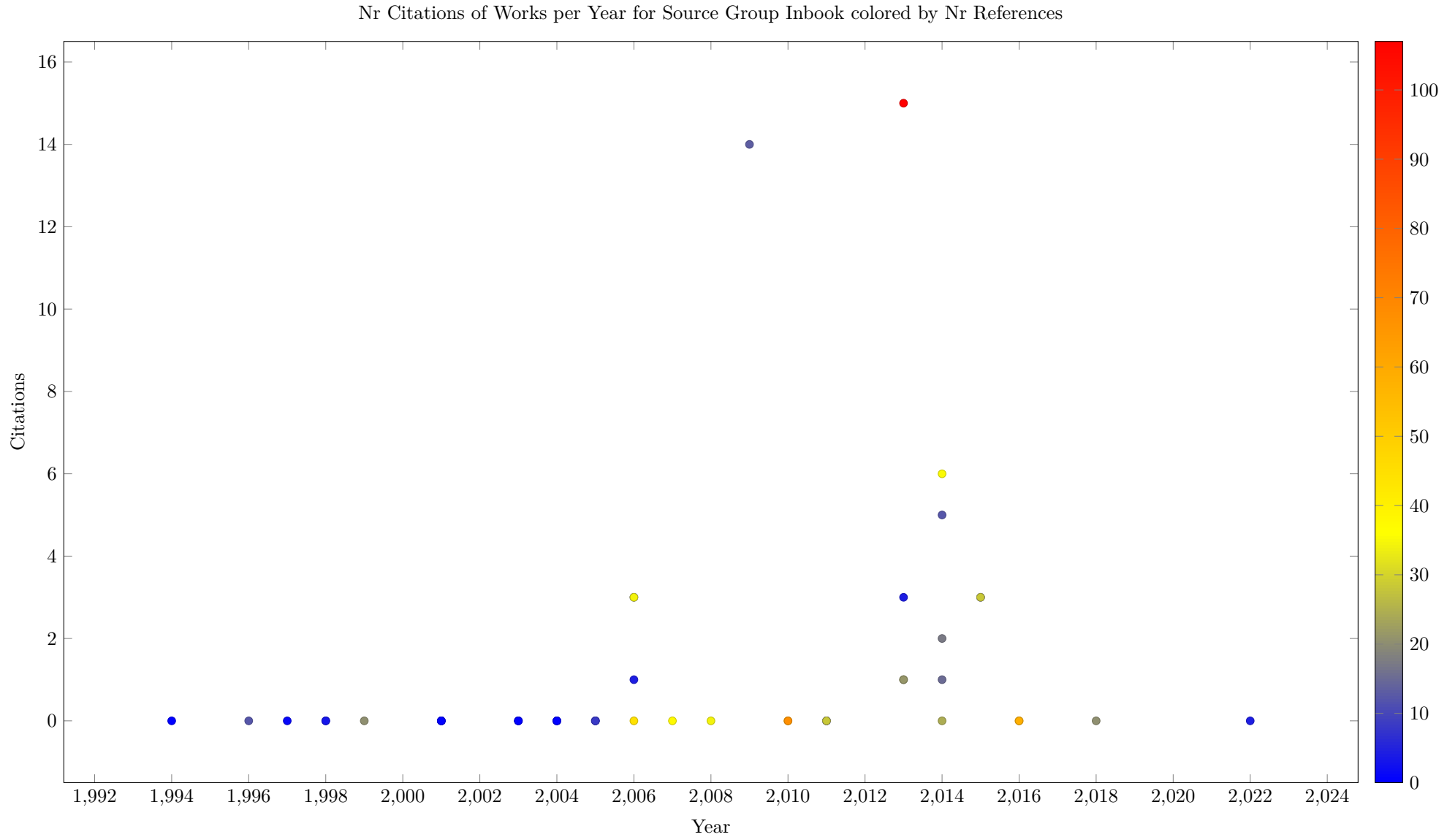

Nr Citations of Works per Year for Source Group AIJournal colored by Nr References
Citations
Year
140
120
100
80
60
40
20
0
1,984
1,986
1,988
1,990
1,992
1,994
1,996
1,998
2,000
2,002
2,004
2,006
2,008
2,010
2,012
2,014
2,016
2,018
2,020
2,022
400
350
300
250
200
150
100
50
0

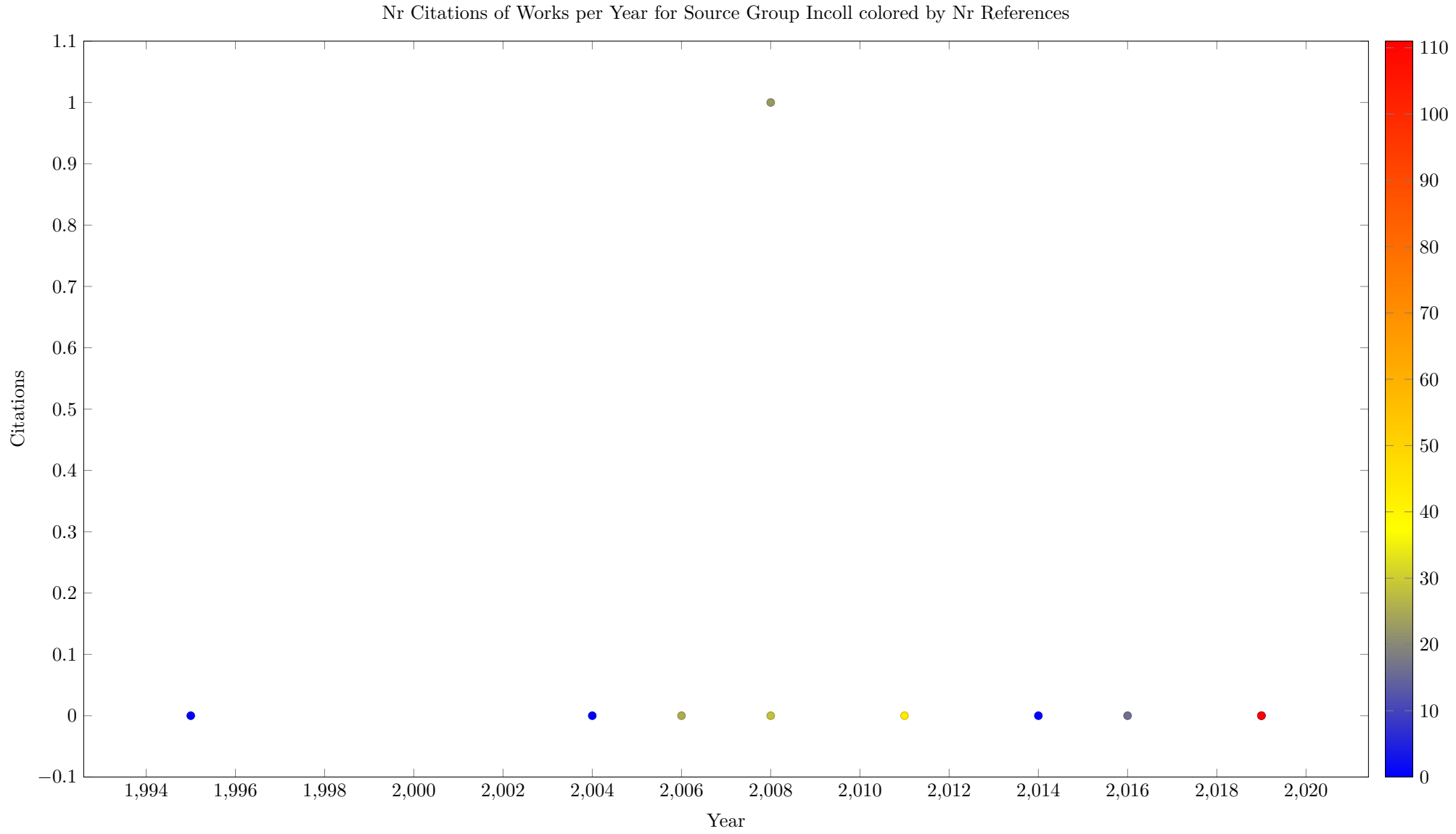

Nr Citations of Works per Year for Source Group ORJournal colored by Nr References
Citations
0
20
40
60
80
100
120
140
160
180
200
1,974 1,976 1,978 1,980 1,982 1,984 1,986 1,988 1,990 1,992 1,994 1,996 1,998 2,000 2,002 2,004 2,006 2,008 2,010 2,012 2,014 2,016 2,018 2,020 2,022 2,024 2,026
Year
0
10
20
30
40
50
60
70
80

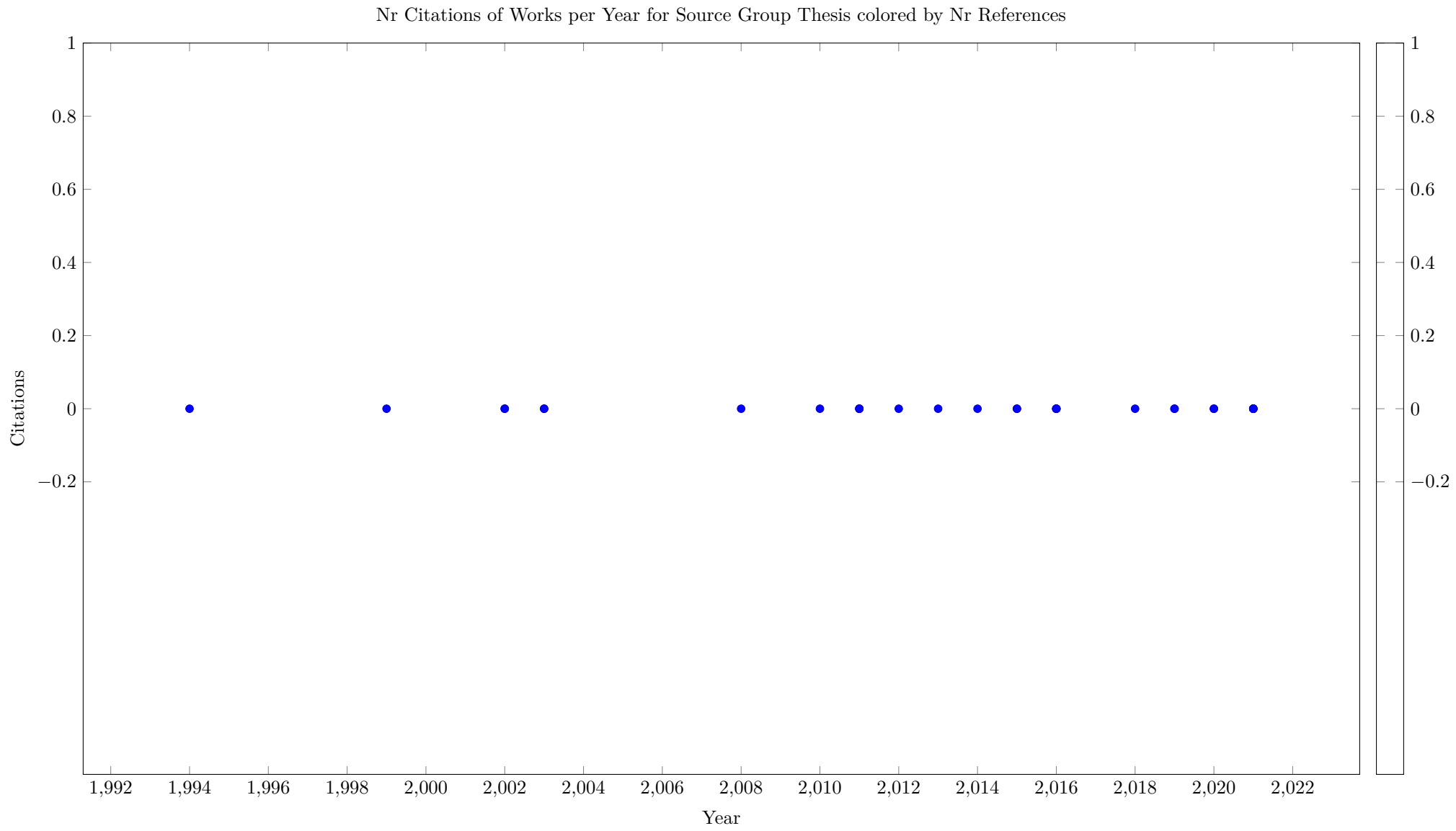

Nr Citations of Works per Year for Source Group Preprint colored by Nr References
Citations
1
0.8
0.6
0.4
0.2
0
−0.2
2,001 2,002 2,003 2,004 2,005 2,006 2,007 2,008 2,009 2,010 2,011 2,012 2,013 2,014 2,015 2,016 2,017 2,018 2,019 2,020 2,021 2,022 2,023 2,024 2,025 2,026
Year
45
40
35
30
25
20
15
10
5
0


Nr Citations of Works per Year for Source Group OtherJournal colored by Nr References
Citations
0
50
100
150
200
250
300
350
400
Year
1,982
1,984
1,986
1,988
1,990
1,992
1,994
1,996
1,998
2,000
2,002
2,004
2,006
2,008
2,010
2,012
2,014
2,016
2,018
2,020
2,022
2,024
2,026
0
20
40
60
80
100
120
140
160
180


Nr Citations of Works per Year for Source Group Book colored by Nr References
Citations
70
60
50
40
30
20
10
0
1,993
1,994
1,995
1,996
1,997
1,998
1,999
2,000
2,001
2,002
2,003
2,004
2,005
2,006
2,007
2,008
2,009
Year
1
0.8
0.6
0.4
0.2
0
−0.2


Nr Citations of Works per Year for Source Group Inbook colored by Nr References
Citations
Year
0
2
4
6
8
10
12
14
16
1,992
1,994
1,996
1,998
2,000
2,002
2,004
2,006
2,008
2,010
2,012
2,014
2,016
2,018
2,020
2,022
2,024
0
10
20
30
40
50
60
70
80
90
100


Nr Citations of Works per Year for Source Group Incoll colored by Nr References
Citations
1.1
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
−0.1
1,994
1,996
1,998
2,000
2,002
2,004
2,006
2,008
2,010
2,012
2,014
2,016
2,018
2,020
Year
110
100
90
80
70
60
50
40
30
20
10
0


Nr Citations of Works per Year for Source Group Thesis colored by Nr References
Citations
1
0.8
0.6
0.4
0.2
0
−0.2
1,992
1,994
1,996
1,998
2,000
2,002
2,004
2,006
2,008
2,010
2,012
2,014
2,016
2,018
2,020
2,022
Year

15.2 Reference Flows

The following table looks at references between source groups that are contained in the survey, i.e. where bot the citing and the cited work is included in the survey. We show how many papers referred to in the group on the left belong to the group in the column.

Table 14: Reference Flows

	Background	CP	CPAIOR	ICAPS	AAAI	IJCAI	OtherConf	Constraints	EJOR	InformsJC	AIJournal	ORJournal	OtherJournal	Book	Inbook	Incoll
Background	47	12	3				1	11	8	15	1	23	25	2	4	
CP	94	101	61	2	1	1	12	32	2	20	11	19	58	18	3	4
CPAIOR	71	92	59	3	2	1	15	39	11	22	6	24	70	23	5	2
OtherConf	50	43	23				14	27	11	17	12	16	69	11	5	1
Constraints	52	52	40	2			7	23	4	12	7	16	57	12	3	1
EJOR	58	2	1					9	21	19	6	17	43		3	1
InformsJC	53	19	11					14	19	22	4	17	35	11	1	1
AIJournal	20	10	4	1			8	5	7	3	13	4	39		2	
ORJournal	93	42	18				1	31	23	34	13	23	91	8	3	1
Preprint	4							3	11	4		4	8	1		
OtherJournal	299	82	54	6			25	110	104	98	55	135	613	37	8	6
Inbook	77	12	15				3	12	9	21	7	24	46	12	6	
Incoll	17	7	7		1		4	5	7	4	5	10	16	4	1	

The entries in the previous table are not directly comparable, without knowing how many works are in group. The next table presents a normalized view, where we divide the flow count by the product of the group sizes. This produces a likelihood of a paper in the source group citing a paper in the target group, given as a percentage from 0 to 100. We can see that the likelihood does not depend on the prestige of the target, e.g. papers at AAAI are cited much less than papers in CP.

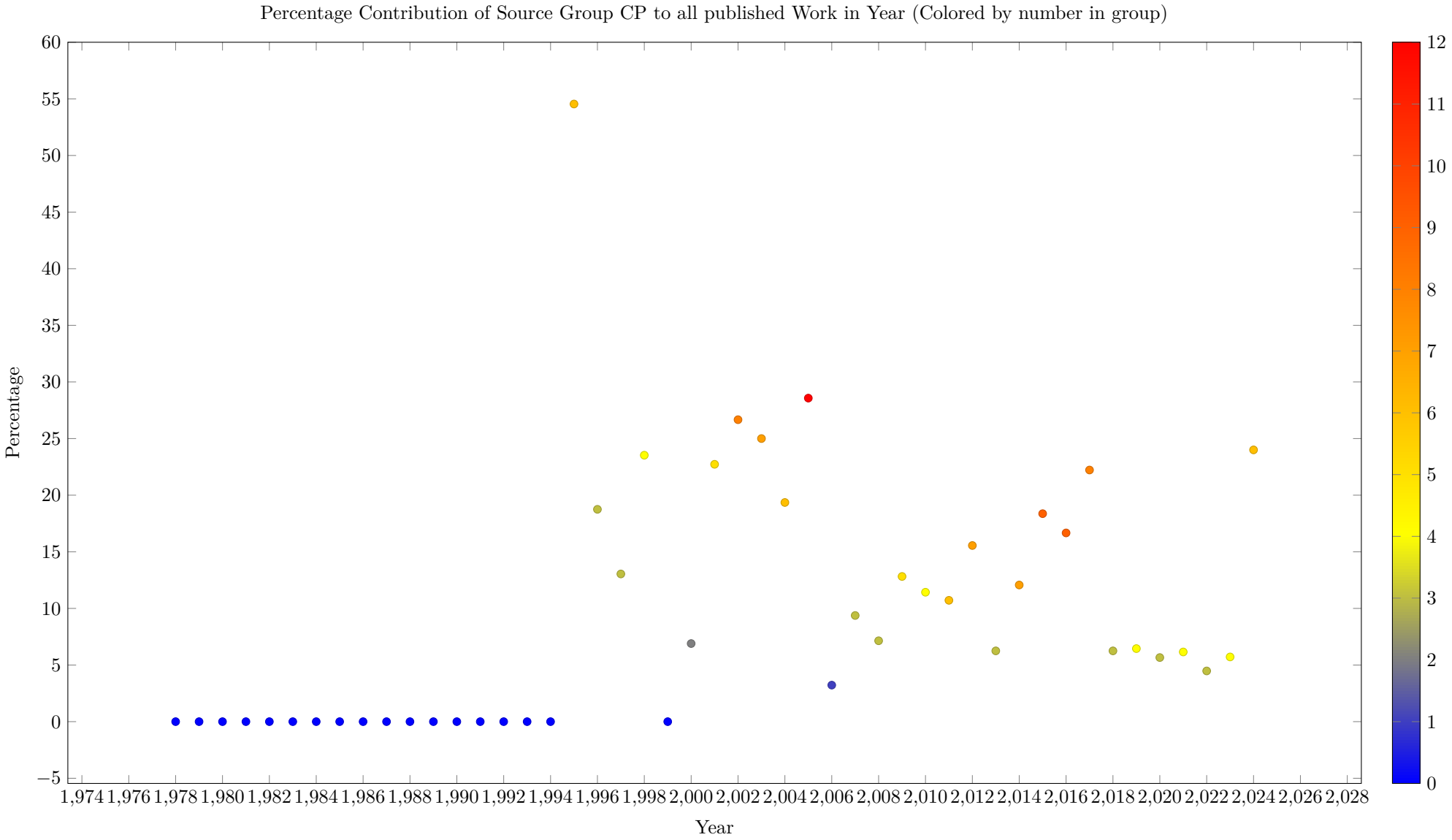
Note that the numbers are derived from the flows contained in the survey, which are based on the OpenCitation reference links. If such links are missing, or we are missing works in some group, then the results will be affected.

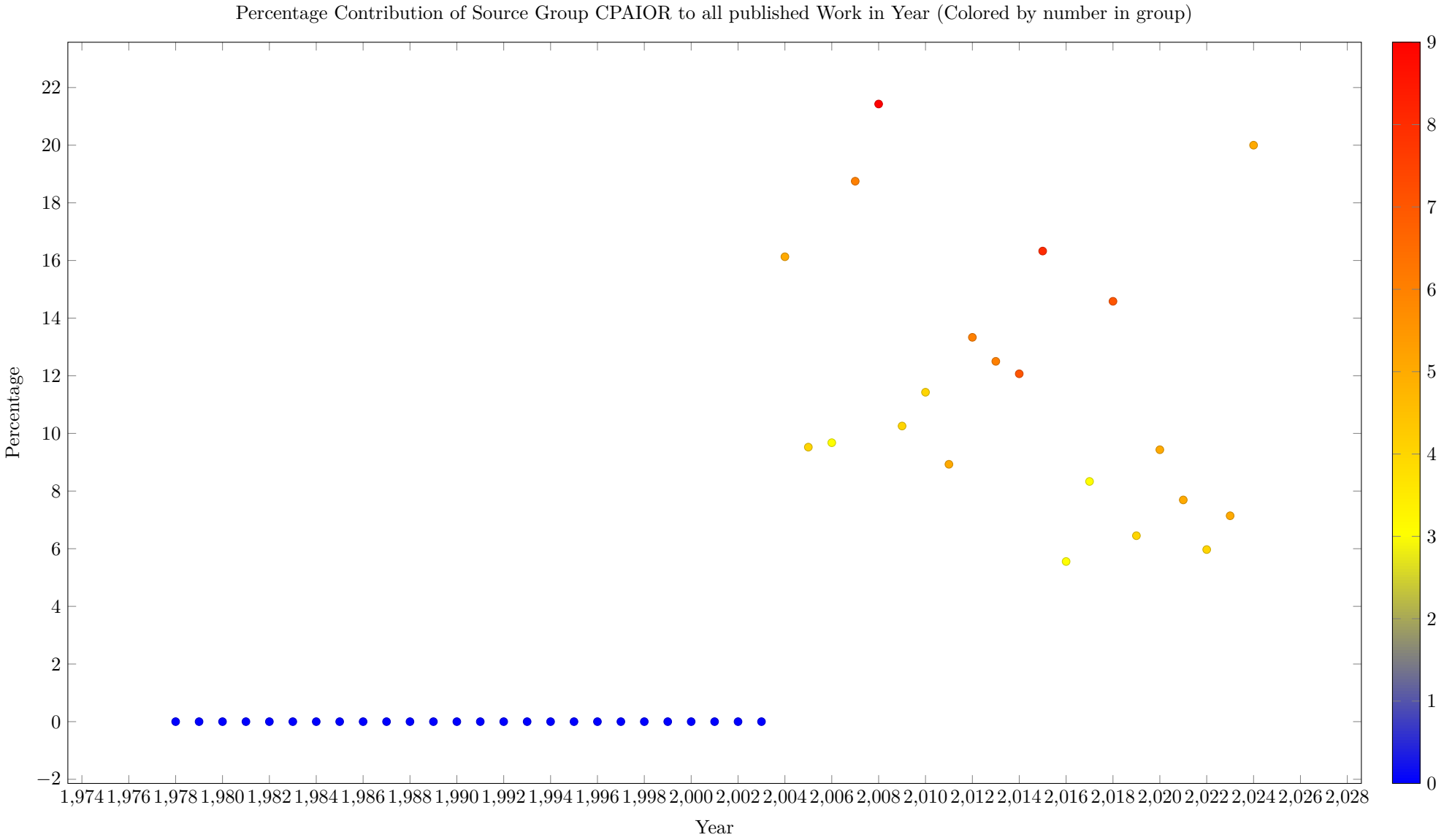
Table 15: Reference Flows Normalized

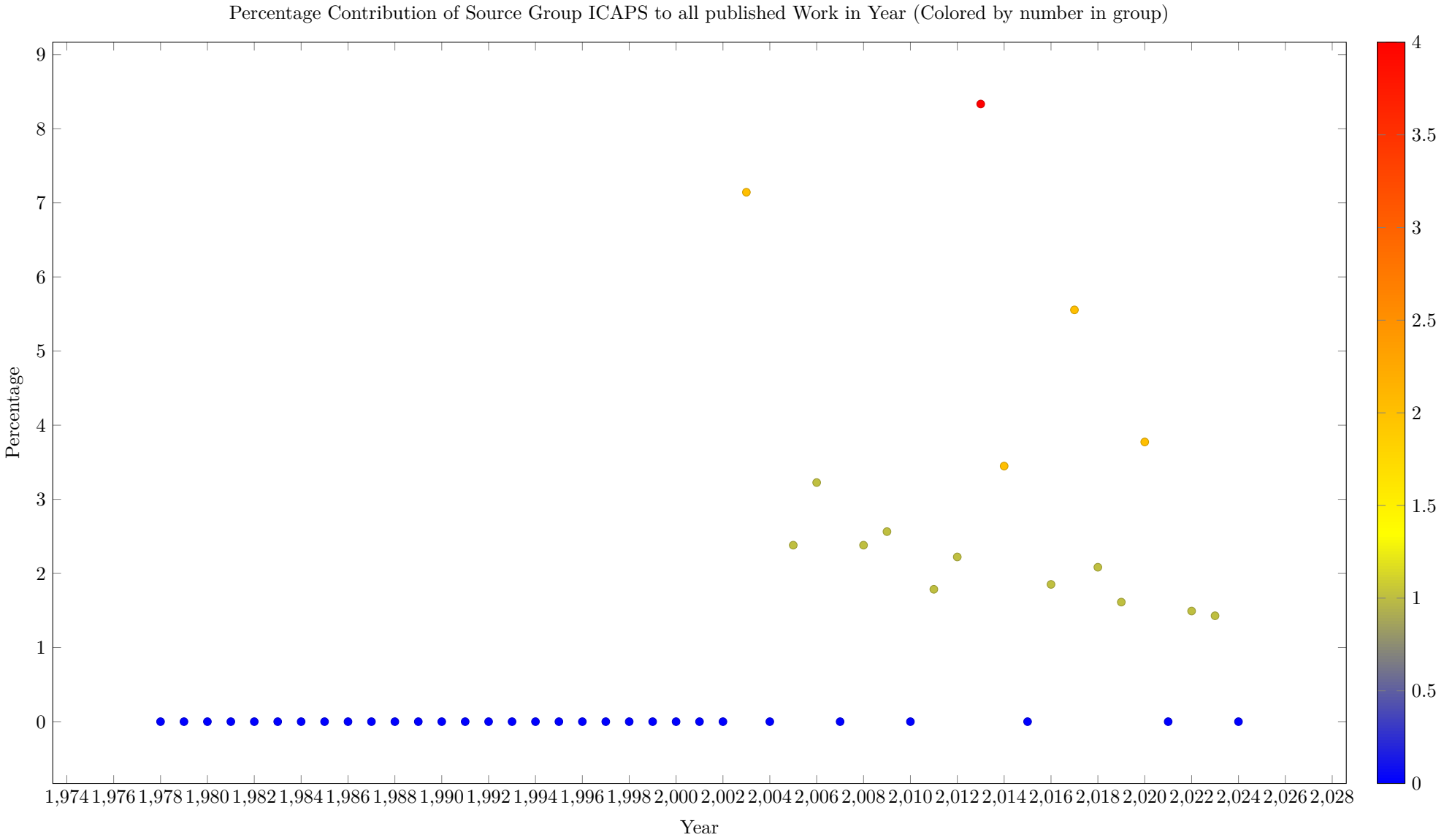
	Background	CP	CPAIOR	ICAPS	AAAI	IJCAI	OtherConf	Constraints	EJOR	InformsJC	AIJournal	ORJournal	OtherJournal	Book	Inbook	Incoll
Background	2.54	0.19	0.06				0.02	0.54	0.58	1.13	0.11	0.79	0.14	1.16	0.20	
CP	1.48	0.46	0.38	0.06	0.01	0.02	0.06	0.46	0.04	0.44	0.35	0.19	0.10	3.04	0.04	0.27
CPAIOR	1.53	0.58	0.51	0.12	0.03	0.03	0.10	0.77	0.32	0.66	0.26	0.33	0.16	5.32	0.10	0.19
OtherConf	0.84	0.21	0.15				0.07	0.42	0.25	0.40	0.41	0.17	0.12	1.99	0.08	0.07
Constraints	2.57	0.75	0.79	0.19			0.11	1.04	0.27	0.82	0.71	0.50	0.30	6.38	0.14	0.21
EJOR	4.22	0.04	0.03					0.60	2.05	1.92	0.89	0.78	0.33		0.20	0.31
InformsJC	3.98	0.41	0.33					0.96	1.92	2.29	0.61	0.81	0.28	8.87	0.07	0.32
AIJournal	2.21	0.32	0.18	0.21			0.28	0.51	1.04	0.46	2.95	0.28	0.46		0.21	
ORJournal	3.18	0.42	0.25				0.01	0.97	1.06	1.61	0.91	0.50	0.33	2.94	0.10	0.15
Preprint	0.55							0.38	2.02	0.76		0.35	0.12	1.47		
OtherJournal	1.73	0.14	0.12	0.06			0.04	0.58	0.81	0.78	0.65	0.49	0.38	2.30	0.04	0.15
Inbook	3.89	0.18	0.30				0.05	0.56	0.61	1.47	0.72	0.77	0.25	6.52	0.28	
Incoll	3.95	0.47	0.65		0.19		0.29	1.06	2.19	1.29	2.38	1.47	0.40	10.00	0.22	

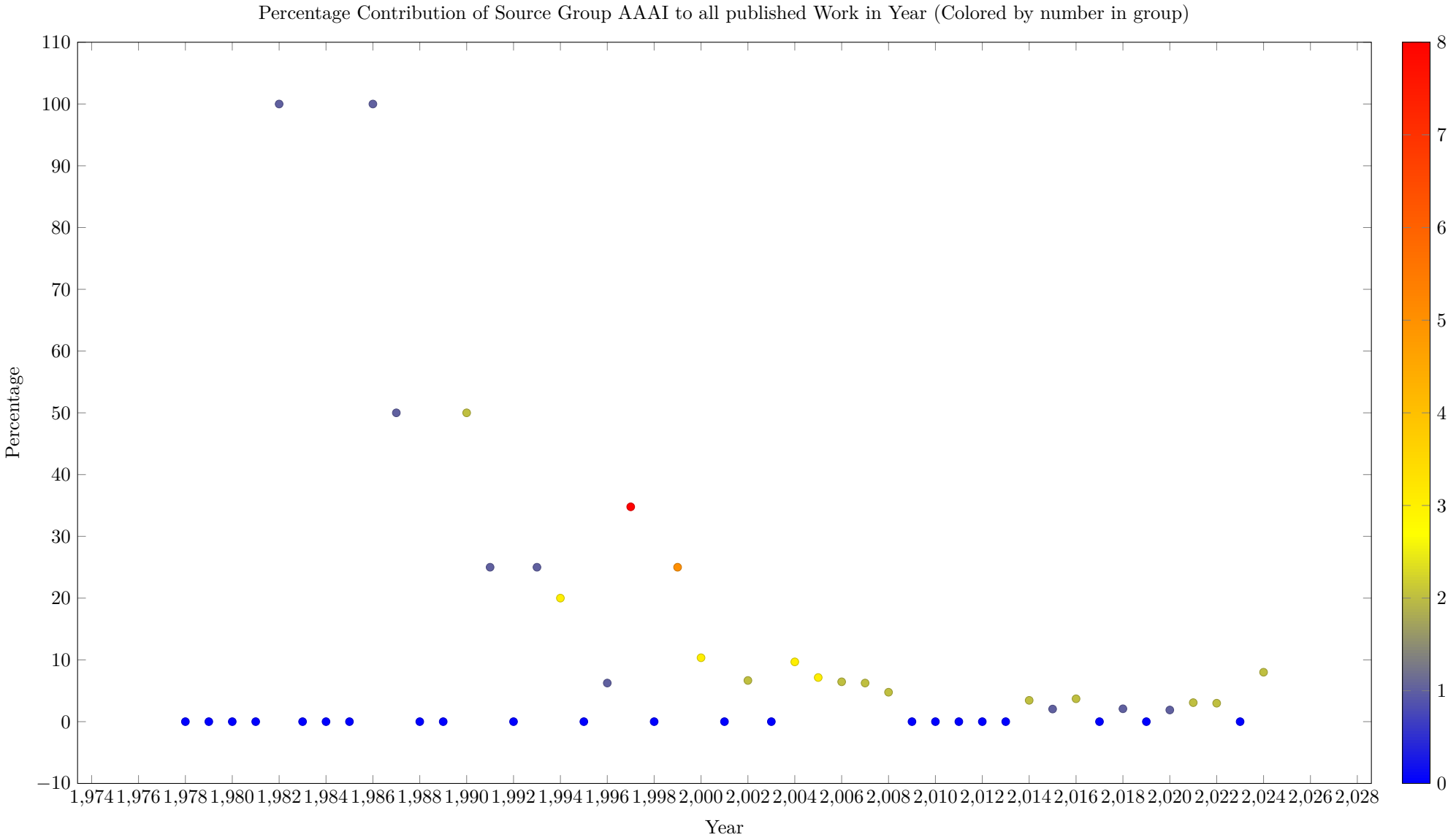
16 Contribution of Source Group to Total Works per Year

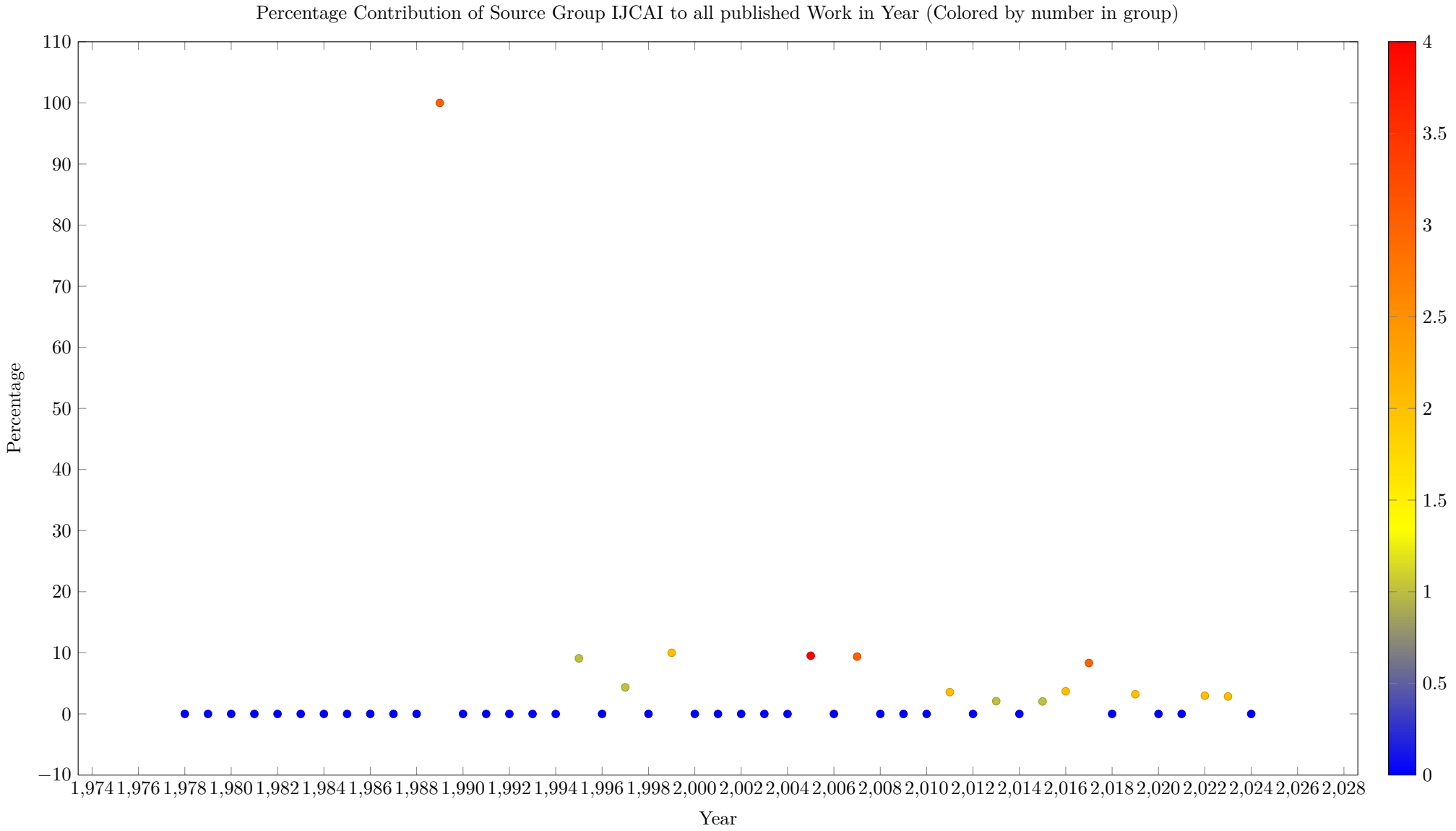
The following plots show the percentage of works published in a year belonging to a specific source group. This plot helps to understand how important that group is to the field over time

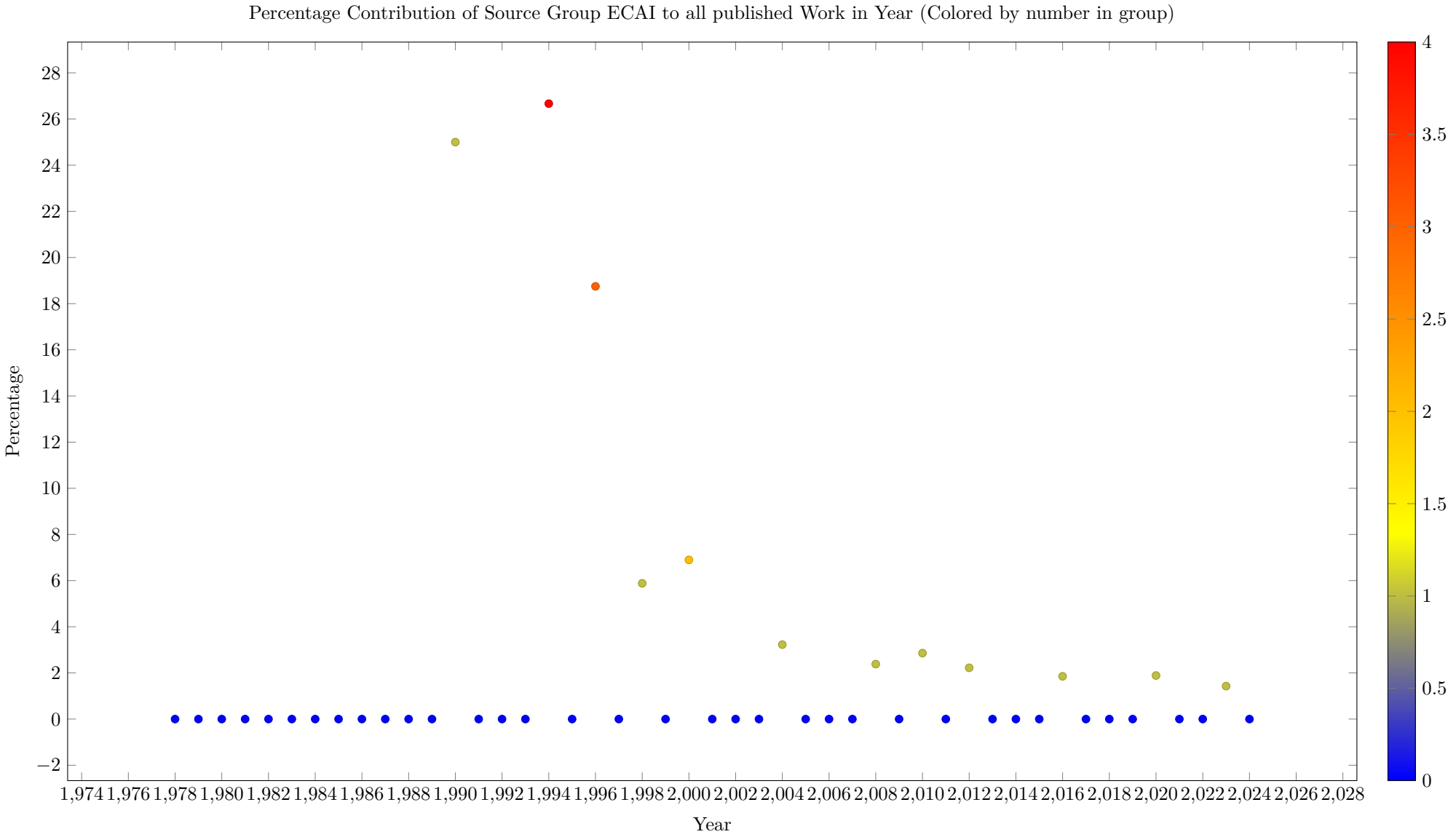

Percentage Contribution of Source Group CP to all published Work in Year (Colored by number in group)
Percentage
60
55
50
45
40
35
30
25
20
15
10
5
0
−5
1,974 1,976 1,978 1,980 1,982 1,984 1,986 1,988 1,990 1,992 1,994 1,996 1,998 2,000 2,002 2,004 2,006 2,008 2,010 2,012 2,014 2,016 2,018 2,020 2,022 2,024 2,026 2,028
Year
12
11
10
9
8
7
6
5
4
3
2
1
0

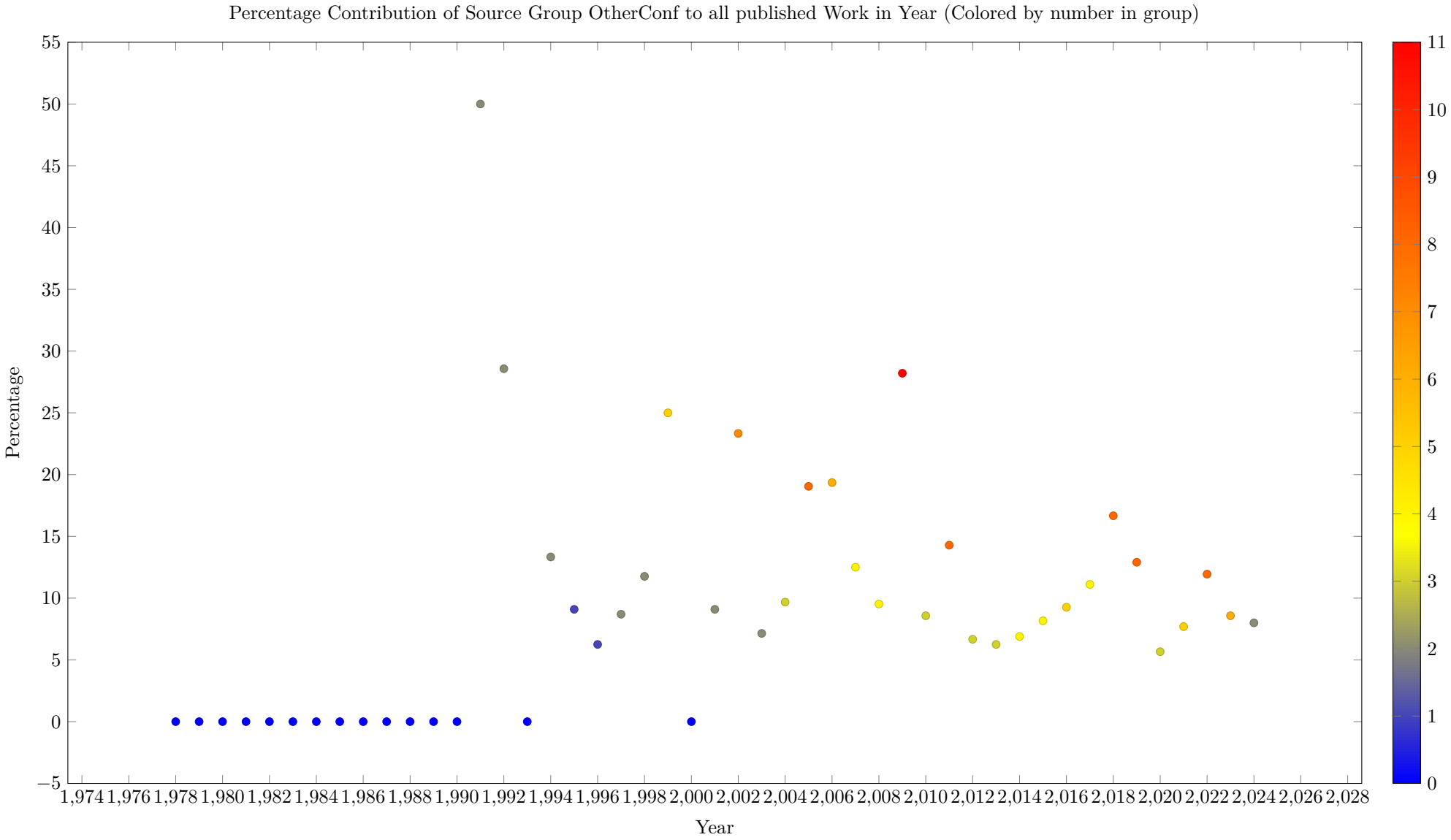

Percentage Contribution of Source Group CPAIOR to all published Work in Year (Colored by number in group)
Percentage
22
20
18
16
14
12
10
8
6
4
2
0
−2
1,974 1,976 1,978 1,980 1,982 1,984 1,986 1,988 1,990 1,992 1,994 1,996 1,998 2,000 2,002 2,004 2,006 2,008 2,010 2,012 2,014 2,016 2,018 2,020 2,022 2,024 2,026 2,028
Year
9
8
7
6
5
4
3
2
1
0

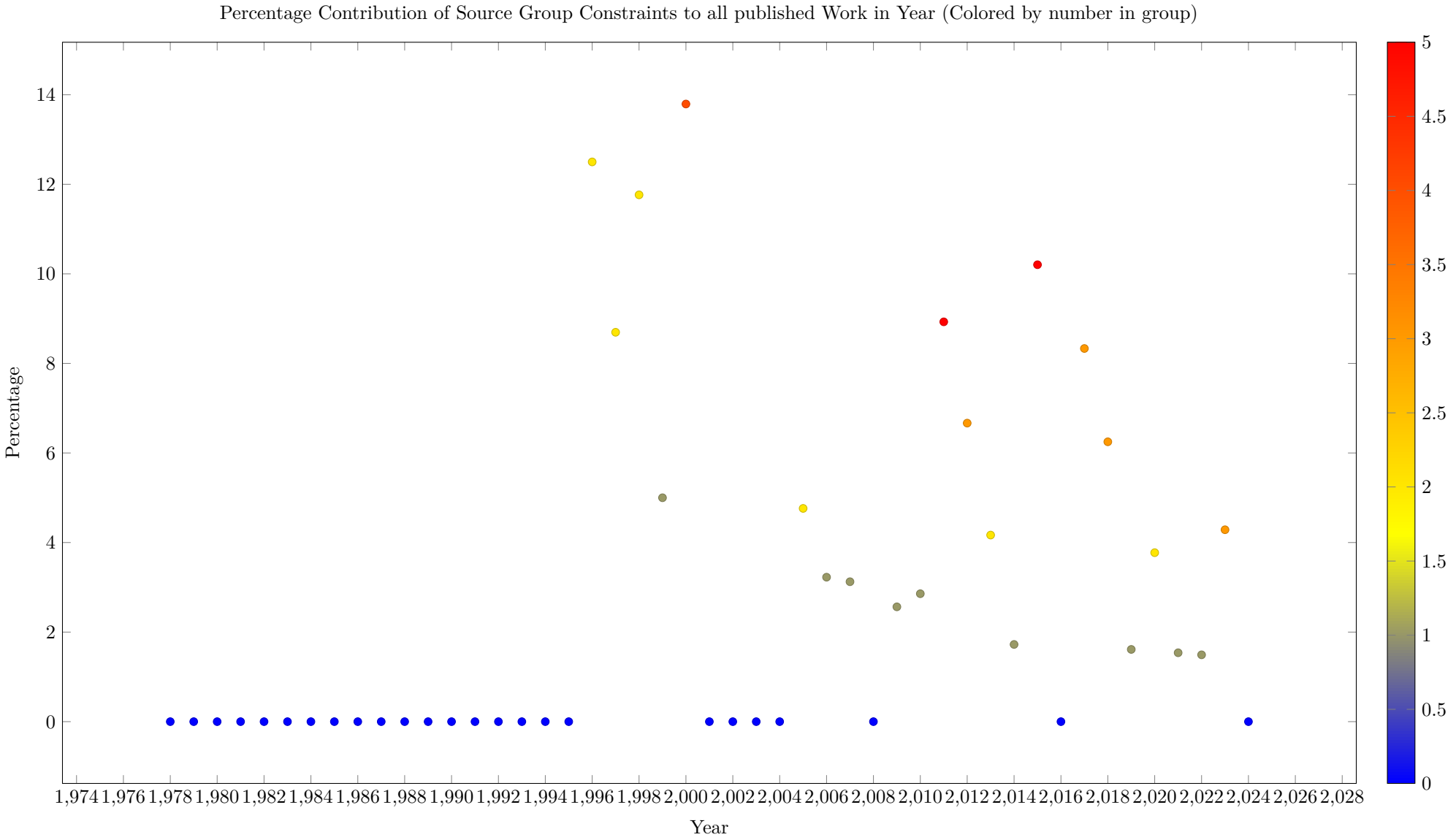

Percentage Contribution of Source Group ICAPS to all published Work in Year (Colored by number in group)
Percentage
0
1
2
3
4
5
6
7
8
9
Year
1,974 1,976 1,978 1,980 1,982 1,984 1,986 1,988 1,990 1,992 1,994 1,996 1,998 2,000 2,002 2,004 2,006 2,008 2,010 2,012 2,014 2,016 2,018 2,020 2,022 2,024 2,026 2,028
0
0.5
1
1.5
2
2.5
3
3.5
4

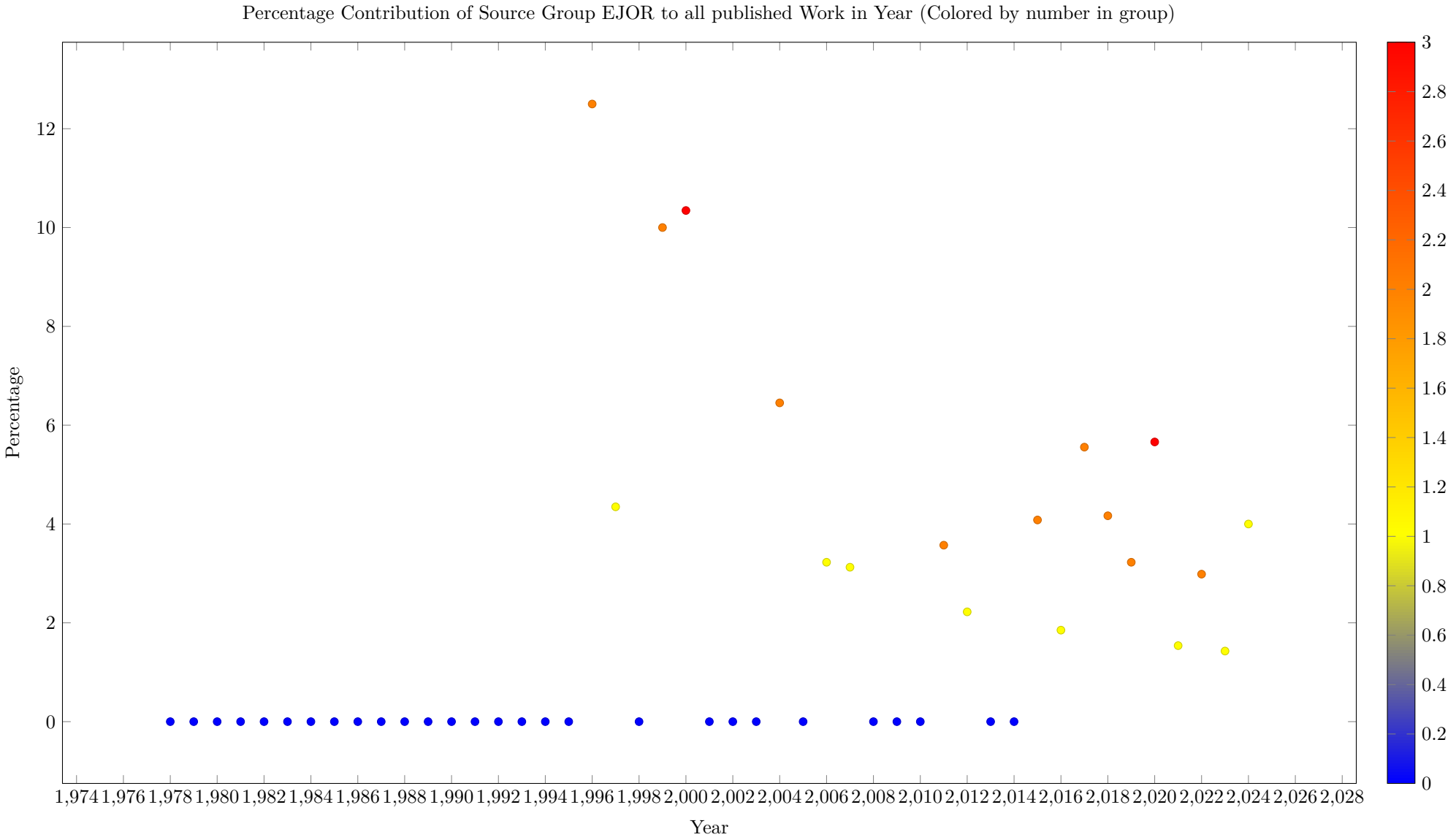

Percentage Contribution of Source Group AAAI to all published Work in Year (Colored by number in group)
Percentage
Year
110
100
90
80
70
60
50
40
30
20
10
0
−10
1,974 1,976 1,978 1,980 1,982 1,984 1,986 1,988 1,990 1,992 1,994 1,996 1,998 2,000 2,002 2,004 2,006 2,008 2,010 2,012 2,014 2,016 2,018 2,020 2,022 2,024 2,026 2,028
8
7
6
5
4
3
2
1
0

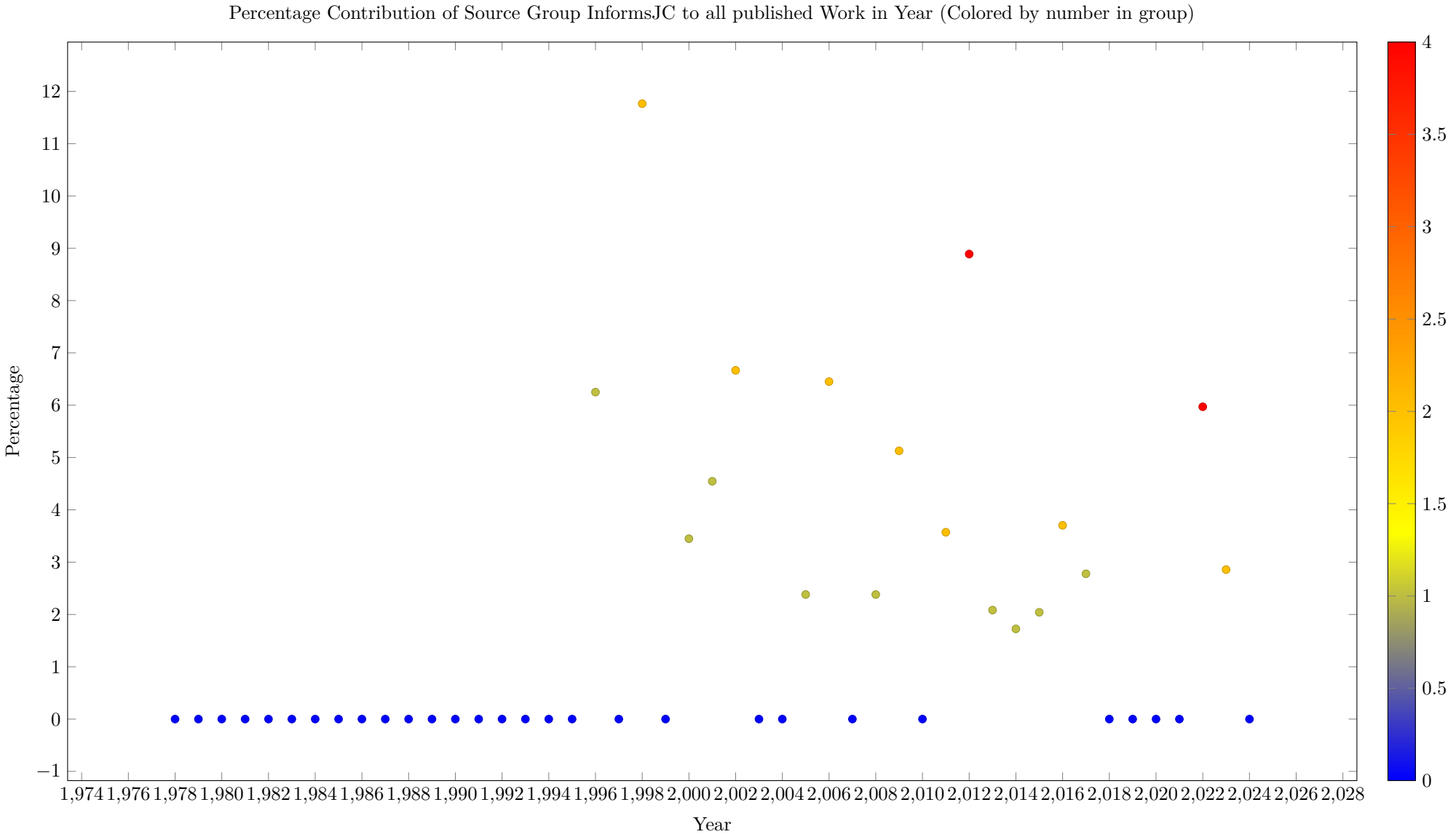

Percentage Contribution of Source Group IJCAI to all published Work in Year (Colored by number in group)
Percentage
110
100
90
80
70
60
50
40
30
20
10
0
−10
Year
1,974 1,976 1,978 1,980 1,982 1,984 1,986 1,988 1,990 1,992 1,994 1,996 1,998 2,000 2,002 2,004 2,006 2,008 2,010 2,012 2,014 2,016 2,018 2,020 2,022 2,024 2,026 2,028
4
3.5
3
2.5
2
1.5
1
0.5
0

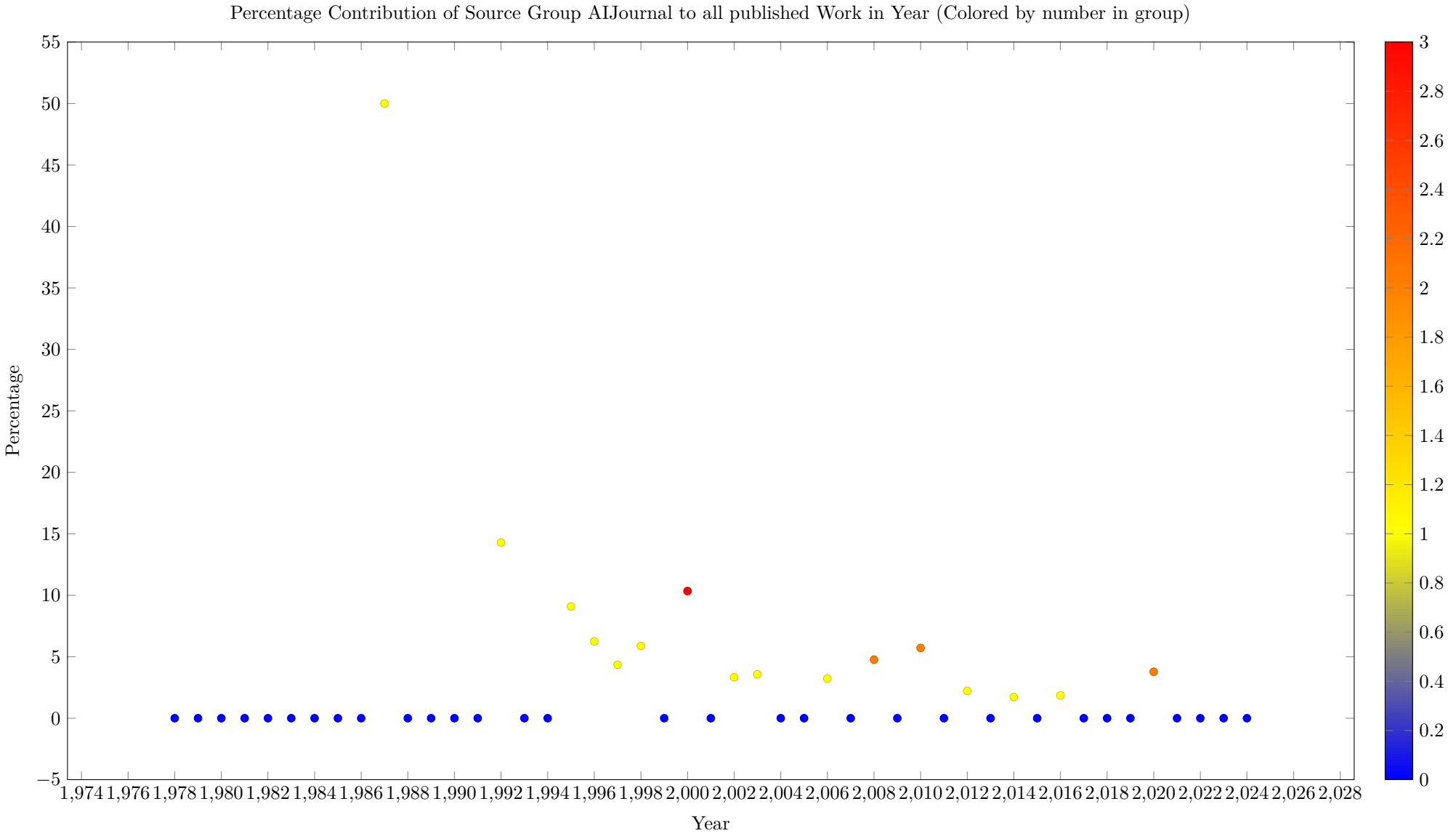

Percentage Contribution of Source Group ECAI to all published Work in Year (Colored by number in group)
Percentage
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
−2
1,974 1,976 1,978 1,980 1,982 1,984 1,986 1,988 1,990 1,992 1,994 1,996 1,998 2,000 2,002 2,004 2,006 2,008 2,010 2,012 2,014 2,016 2,018 2,020 2,022 2,024 2,026 2,028
Year
4
3.5
3
2.5
2
1.5
1
0.5
0

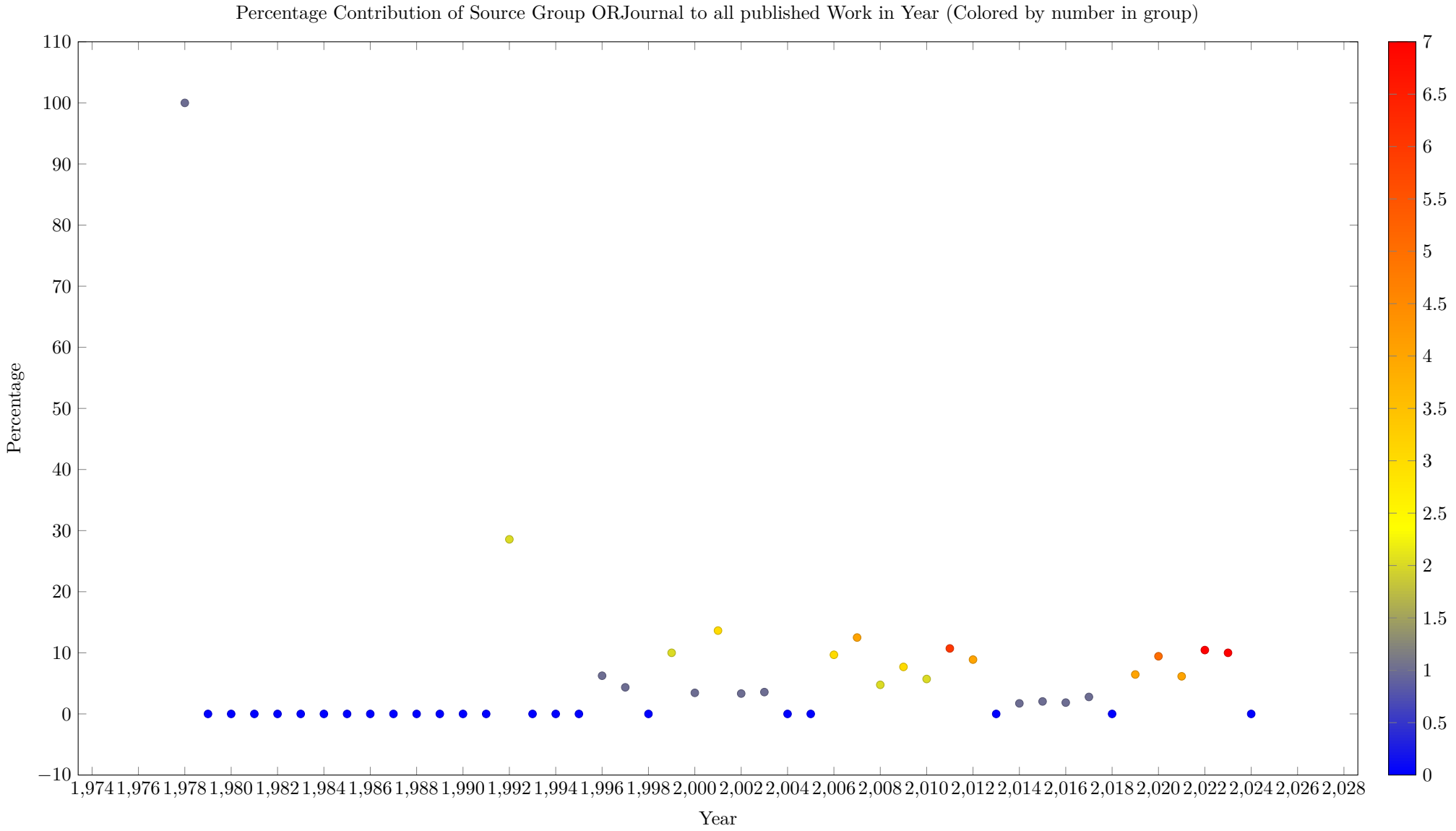

Percentage Contribution of Source Group OtherConf to all published Work in Year (Colored by number in group)
Percentage
55
50
45
40
35
30
25
20
15
10
5
0
−5
Year
1,974 1,976 1,978 1,980 1,982 1,984 1,986 1,988 1,990 1,992 1,994 1,996 1,998 2,000 2,002 2,004 2,006 2,008 2,010 2,012 2,014 2,016 2,018 2,020 2,022 2,024 2,026 2,028
11
10
9
8
7
6
5
4
3
2
1
0

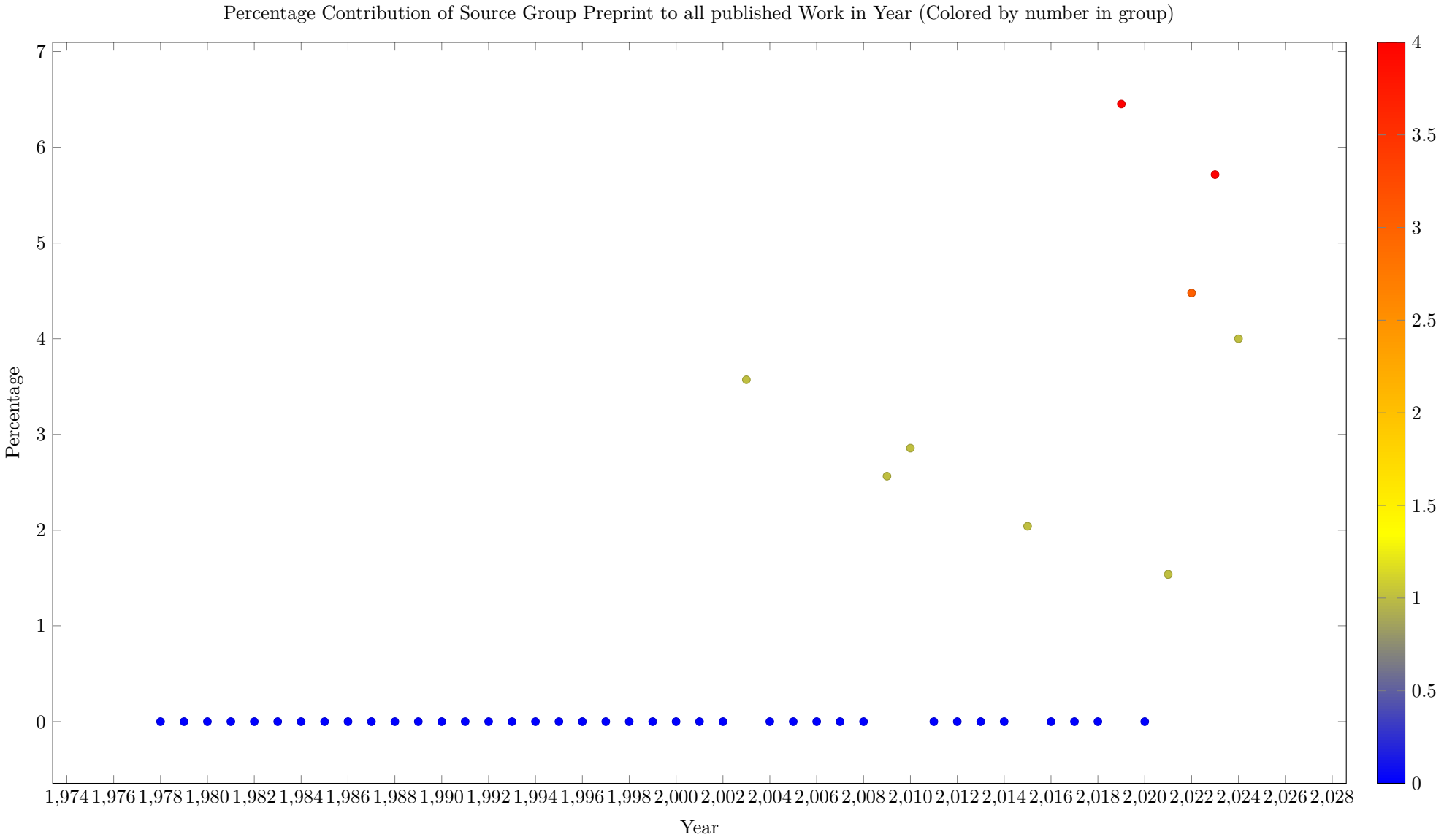

Percentage Contribution of Source Group Constraints to all published Work in Year (Colored by number in group)
Percentage
0
2
4
6
8
10
12
14
Year
1,974 1,976 1,978 1,980 1,982 1,984 1,986 1,988 1,990 1,992 1,994 1,996 1,998 2,000 2,002 2,004 2,006 2,008 2,010 2,012 2,014 2,016 2,018 2,020 2,022 2,024 2,026 2,028
0
0.5
1
1.5
2
2.5
3
3.5
4
4.5
5

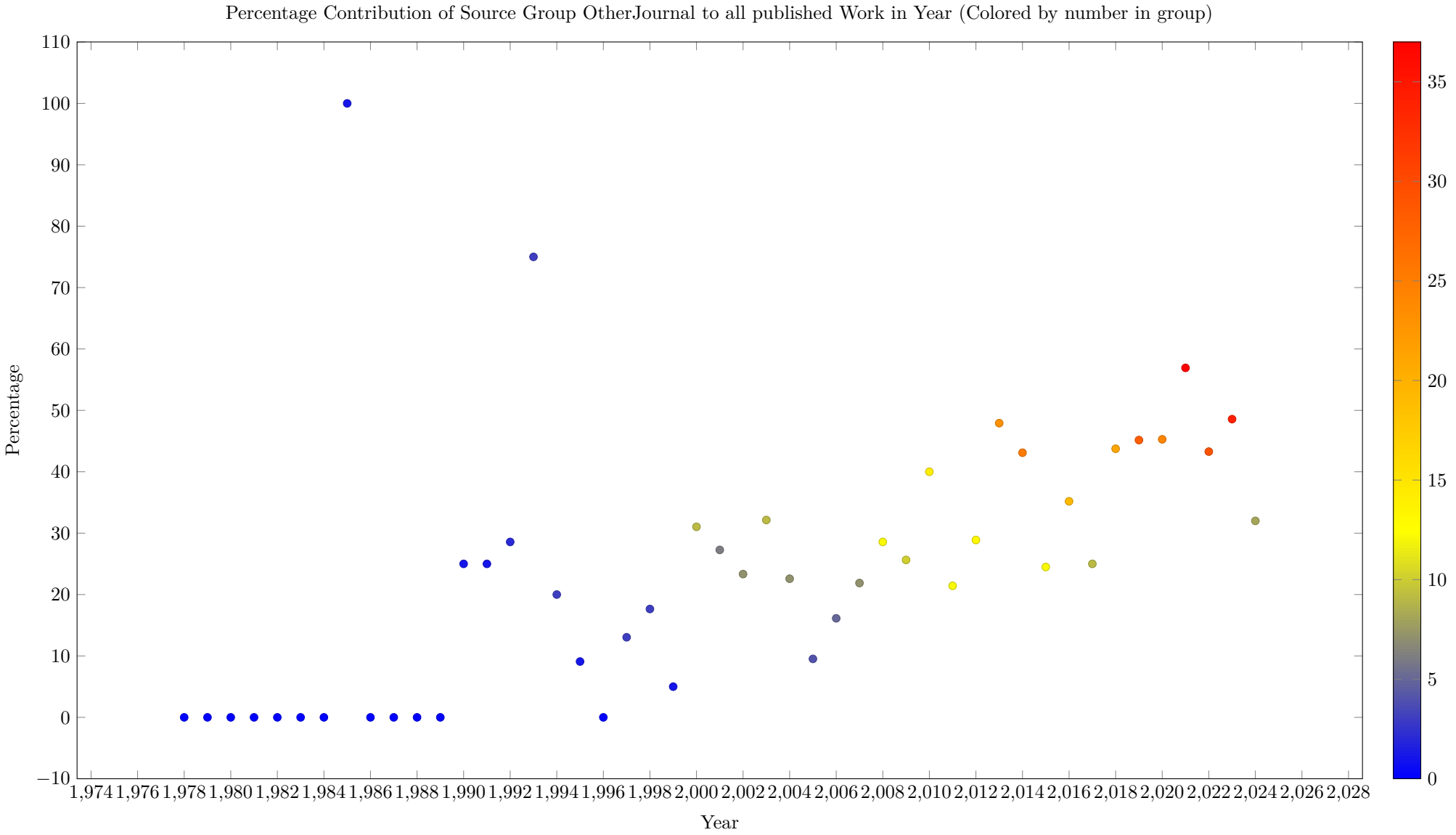

Percentage Contribution of Source Group EJOR to all published Work in Year (Colored by number in group)
Percentage
0
2
4
6
8
10
12
Year
1,974 1,976 1,978 1,980 1,982 1,984 1,986 1,988 1,990 1,992 1,994 1,996 1,998 2,000 2,002 2,004 2,006 2,008 2,010 2,012 2,014 2,016 2,018 2,020 2,022 2,024 2,026 2,028
0 0.2 0.4 0.6 0.8 1 1.2 1.4 1.6 1.8 2 2.2 2.4 2.6 2.8 3

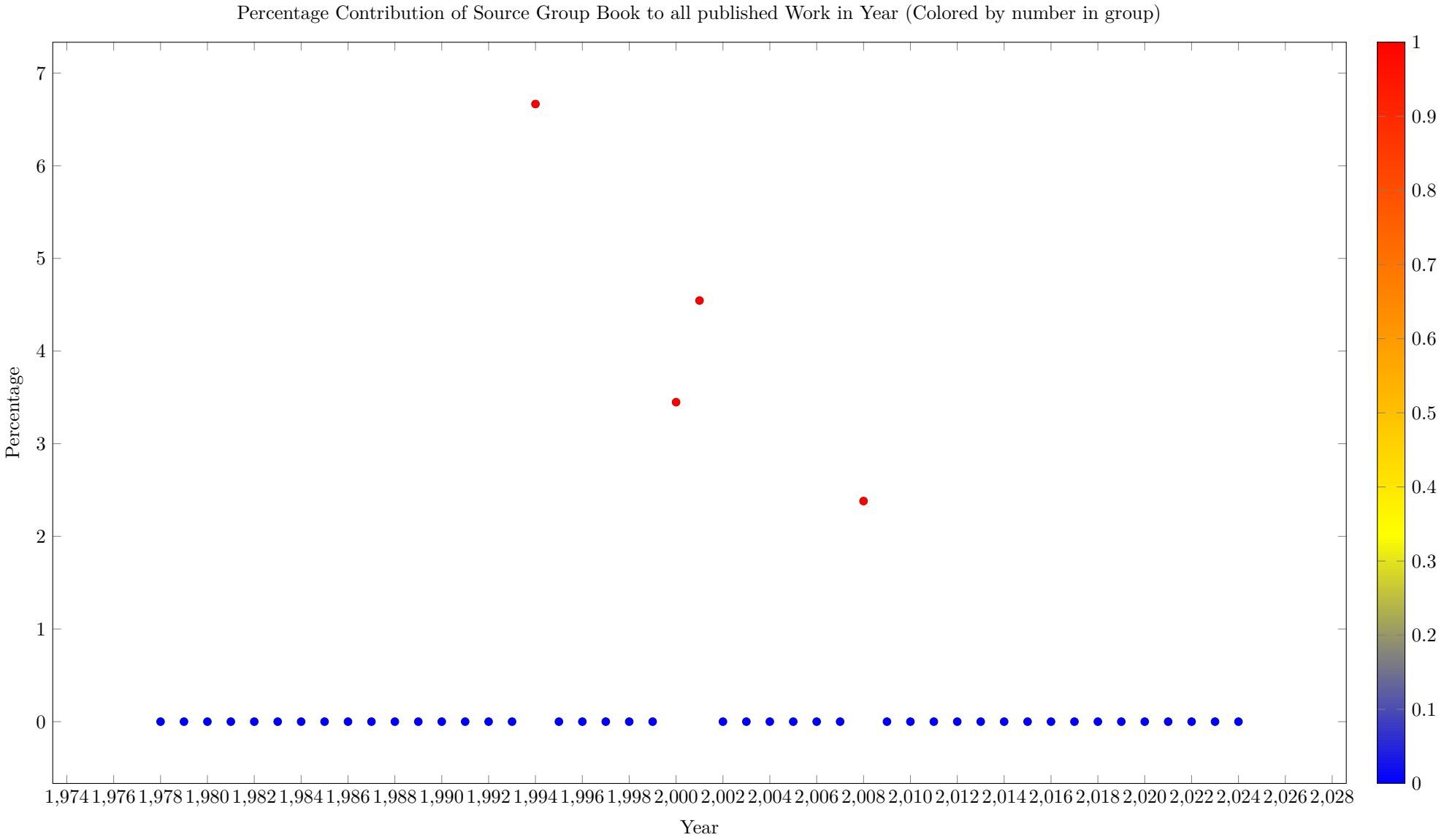

Percentage Contribution of Source Group InformsJC to all published Work in Year (Colored by number in group)
Percentage
Year
12
11
10
9
8
7
6
5
4
3
2
1
0
−1
1,974 1,976 1,978 1,980 1,982 1,984 1,986 1,988 1,990 1,992 1,994 1,996 1,998 2,000 2,002 2,004 2,006 2,008 2,010 2,012 2,014 2,016 2,018 2,020 2,022 2,024 2,026 2,028
4
3.5
3
2.5
2
1.5
1
0.5
0

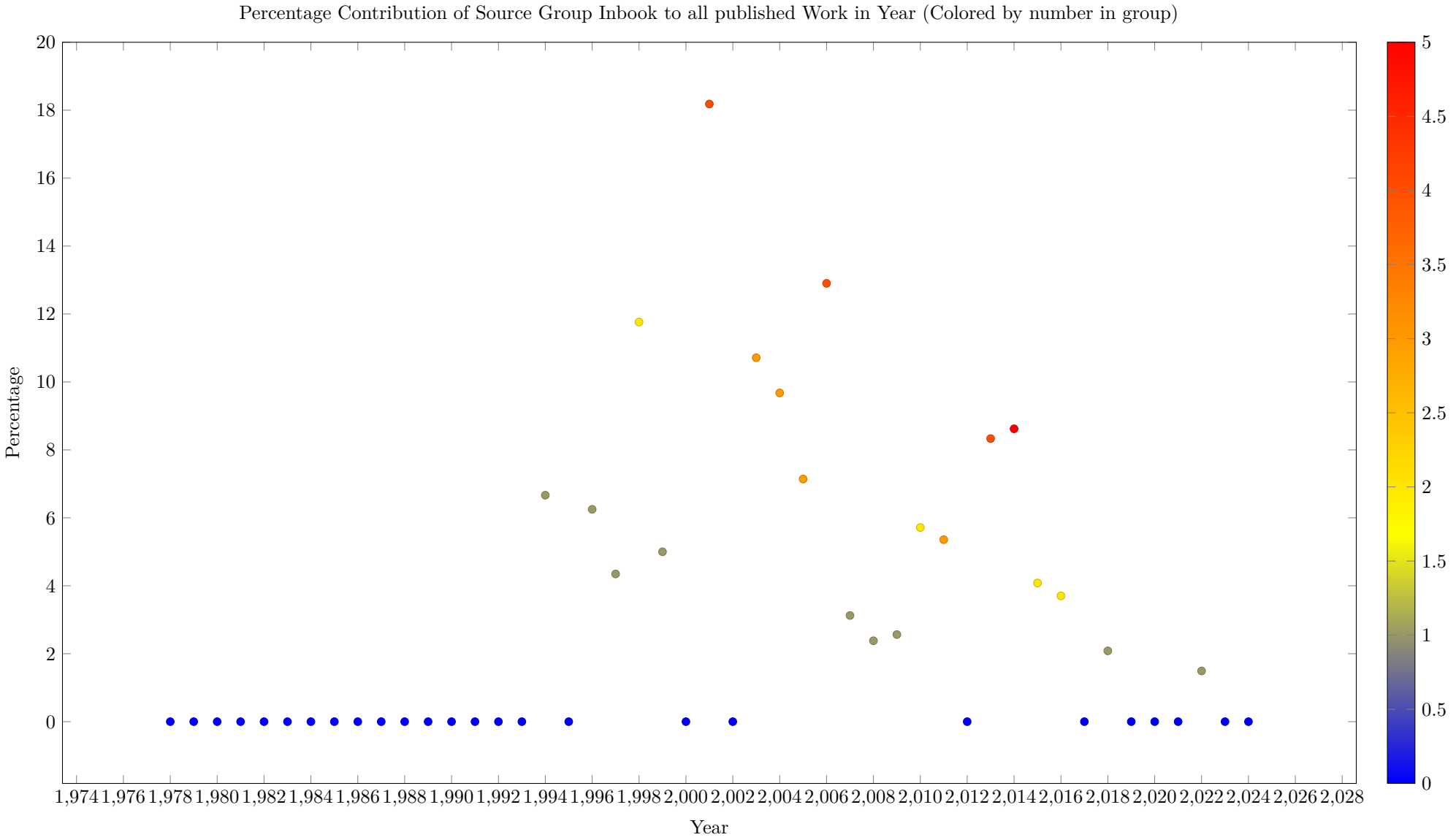

Percentage Contribution of Source Group AIJournal to all published Work in Year (Colored by number in group)
Percentage
55
50
45
40
35
30
25
20
15
10
5
0
−5
Year
1,974 1,976 1,978 1,980 1,982 1,984 1,986 1,988 1,990 1,992 1,994 1,996 1,998 2,000 2,002 2,004 2,006 2,008 2,010 2,012 2,014 2,016 2,018 2,020 2,022 2,024 2,026 2,028
3
2.8
2.6
2.4
2.2
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0

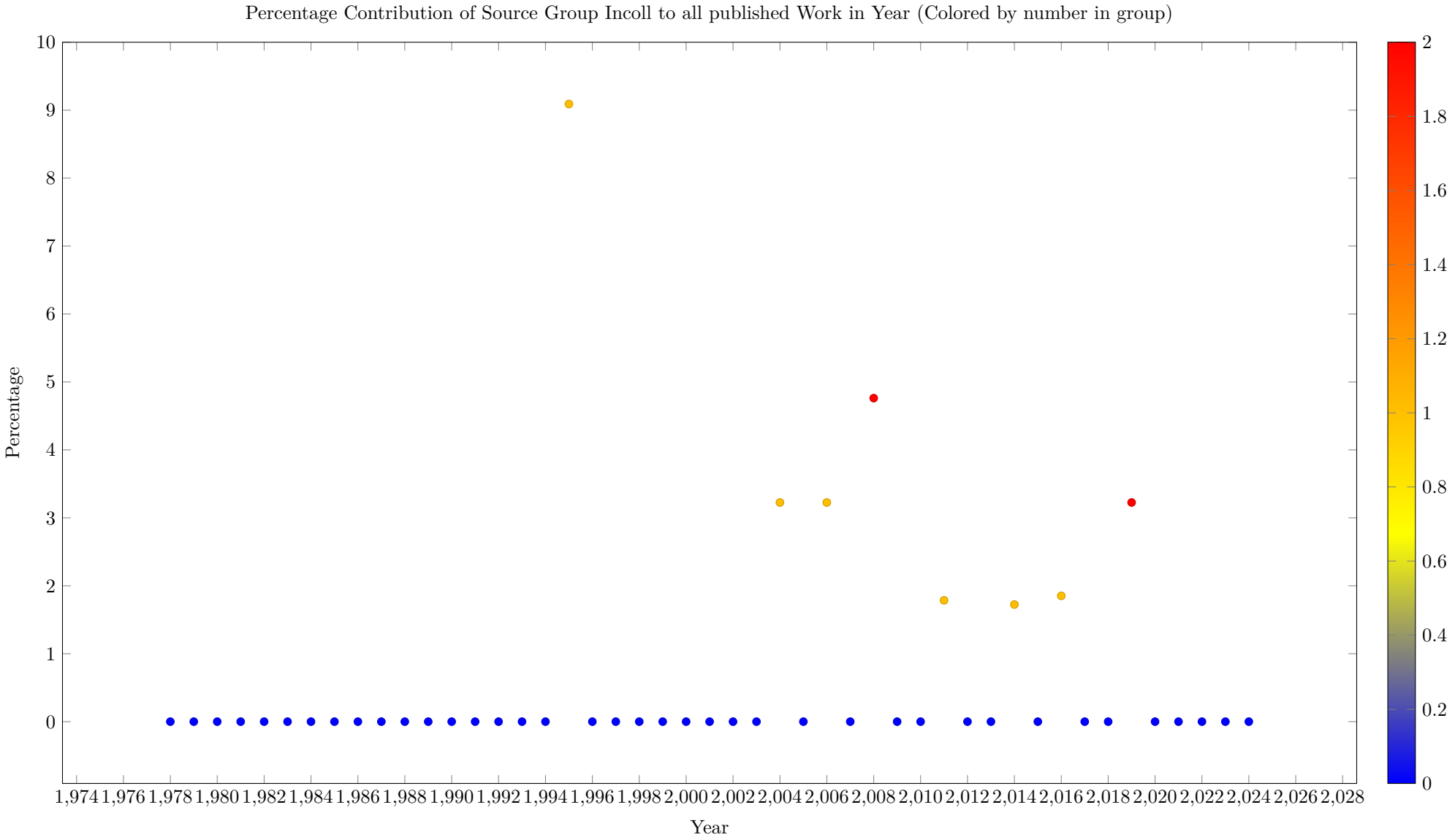

Percentage Contribution of Source Group ORJournal to all published Work in Year (Colored by number in group)
Percentage
110
100
90
80
70
60
50
40
30
20
10
0
−10
1,974 1,976 1,978 1,980 1,982 1,984 1,986 1,988 1,990 1,992 1,994 1,996 1,998 2,000 2,002 2,004 2,006 2,008 2,010 2,012 2,014 2,016 2,018 2,020 2,022 2,024 2,026 2,028
Year
7
6.5
6
5.5
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0

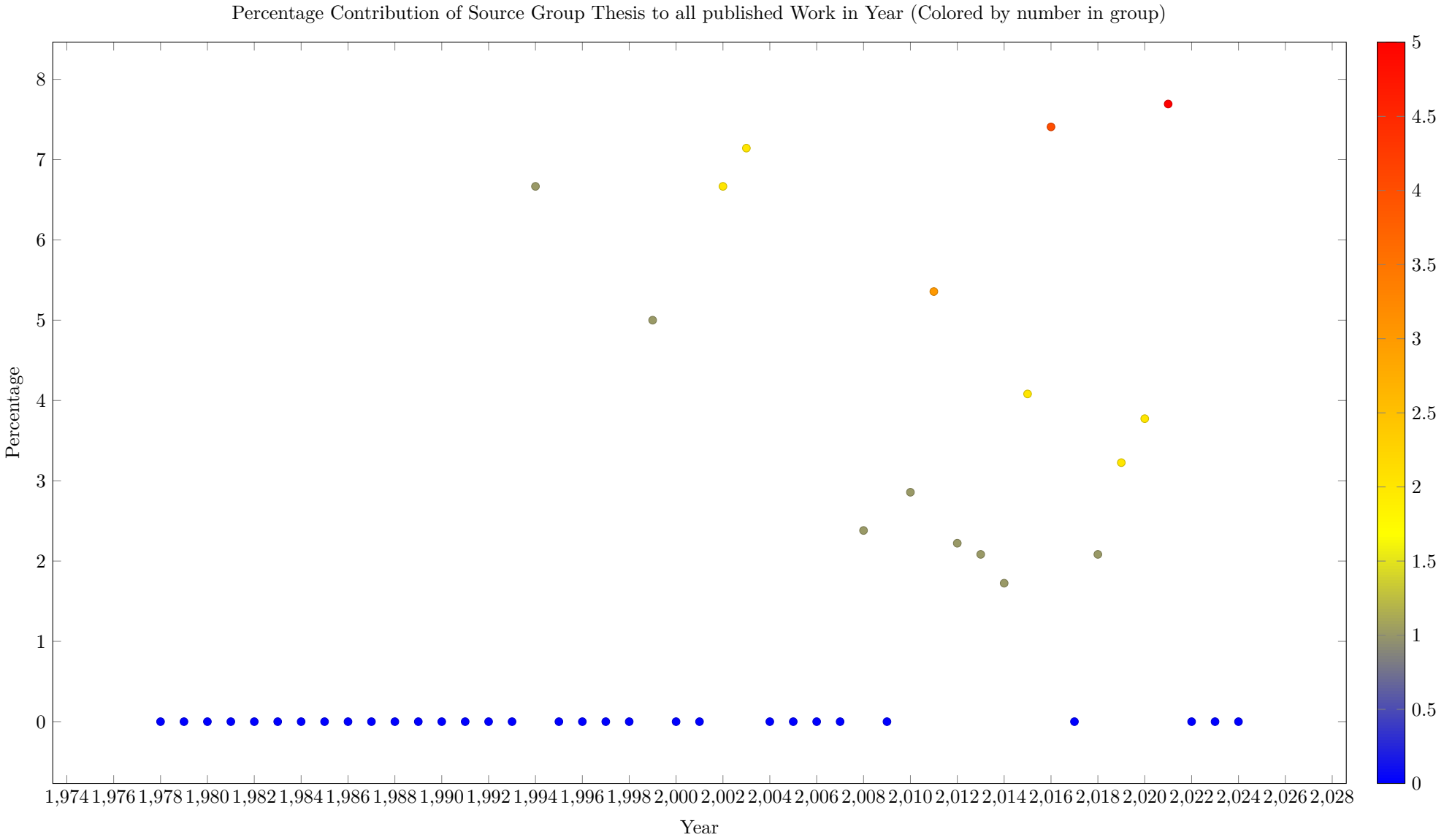

Percentage Contribution of Source Group Preprint to all published Work in Year (Colored by number in group)
Percentage
0
1
2
3
4
5
6
7
Year
1,974 1,976 1,978 1,980 1,982 1,984 1,986 1,988 1,990 1,992 1,994 1,996 1,998 2,000 2,002 2,004 2,006 2,008 2,010 2,012 2,014 2,016 2,018 2,020 2,022 2,024 2,026 2,028
0
0.5
1
1.5
2
2.5
3
3.5
4


Percentage Contribution of Source Group OtherJournal to all published Work in Year (Colored by number in group)
Percentage
110
100
90
80
70
60
50
40
30
20
10
0
−10
1,974 1,976 1,978 1,980 1,982 1,984 1,986 1,988 1,990 1,992 1,994 1,996 1,998 2,000 2,002 2,004 2,006 2,008 2,010 2,012 2,014 2,016 2,018 2,020 2,022 2,024 2,026 2,028
Year
35
30
25
20
15
10
5
0

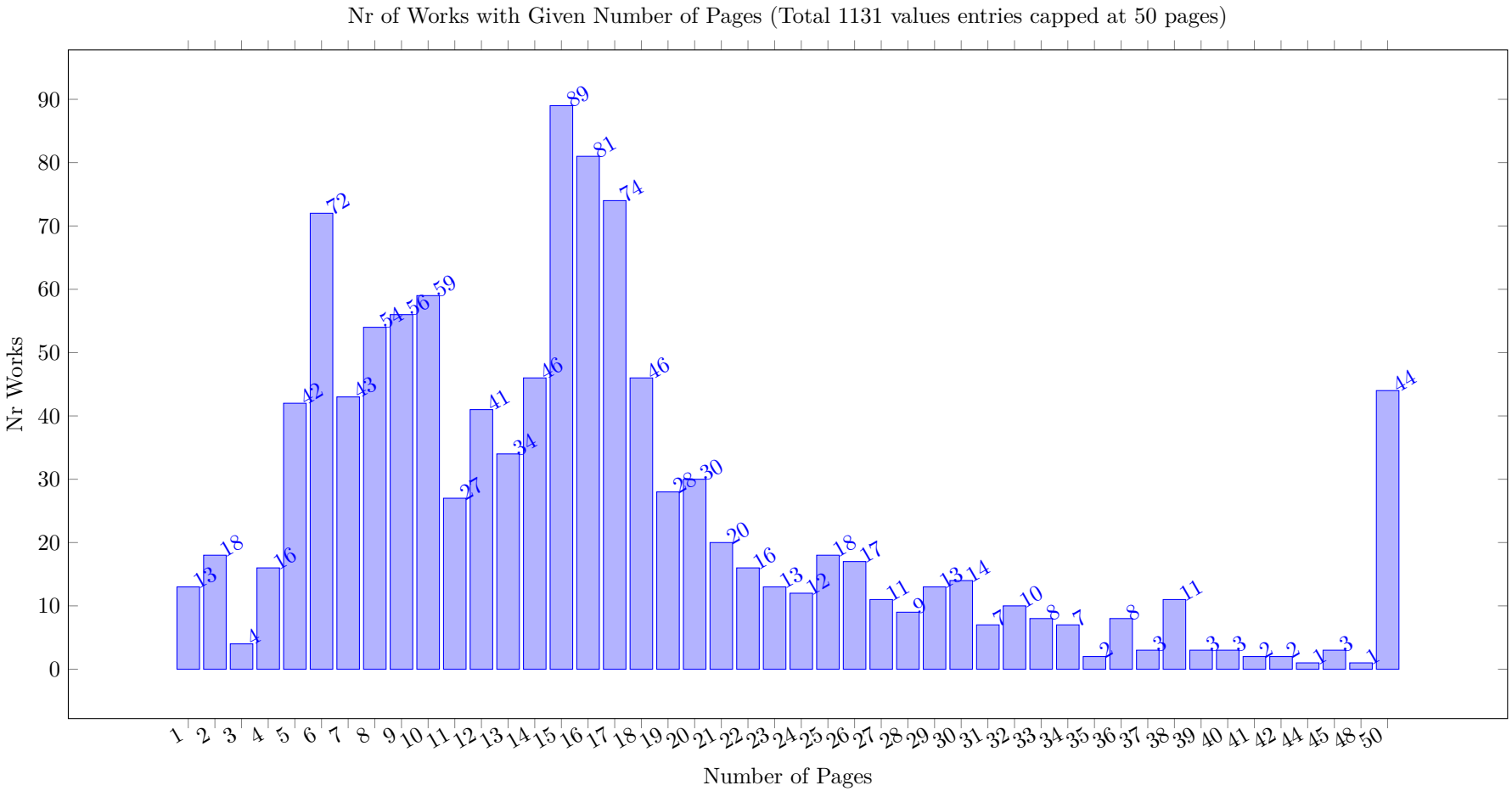

Percentage Contribution of Source Group Book to all published Work in Year (Colored by number in group)
Percentage
0
1
2
3
4
5
6
7
Year
1,974 1,976 1,978 1,980 1,982 1,984 1,986 1,988 1,990 1,992 1,994 1,996 1,998 2,000 2,002 2,004 2,006 2,008 2,010 2,012 2,014 2,016 2,018 2,020 2,022 2,024 2,026 2,028
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1


Percentage Contribution of Source Group Inbook to all published Work in Year (Colored by number in group)
Percentage
20
18
16
14
12
10
8
6
4
2
0
1,974 1,976 1,978 1,980 1,982 1,984 1,986 1,988 1,990 1,992 1,994 1,996 1,998 2,000 2,002 2,004 2,006 2,008 2,010 2,012 2,014 2,016 2,018 2,020 2,022 2,024 2,026 2,028
Year
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0

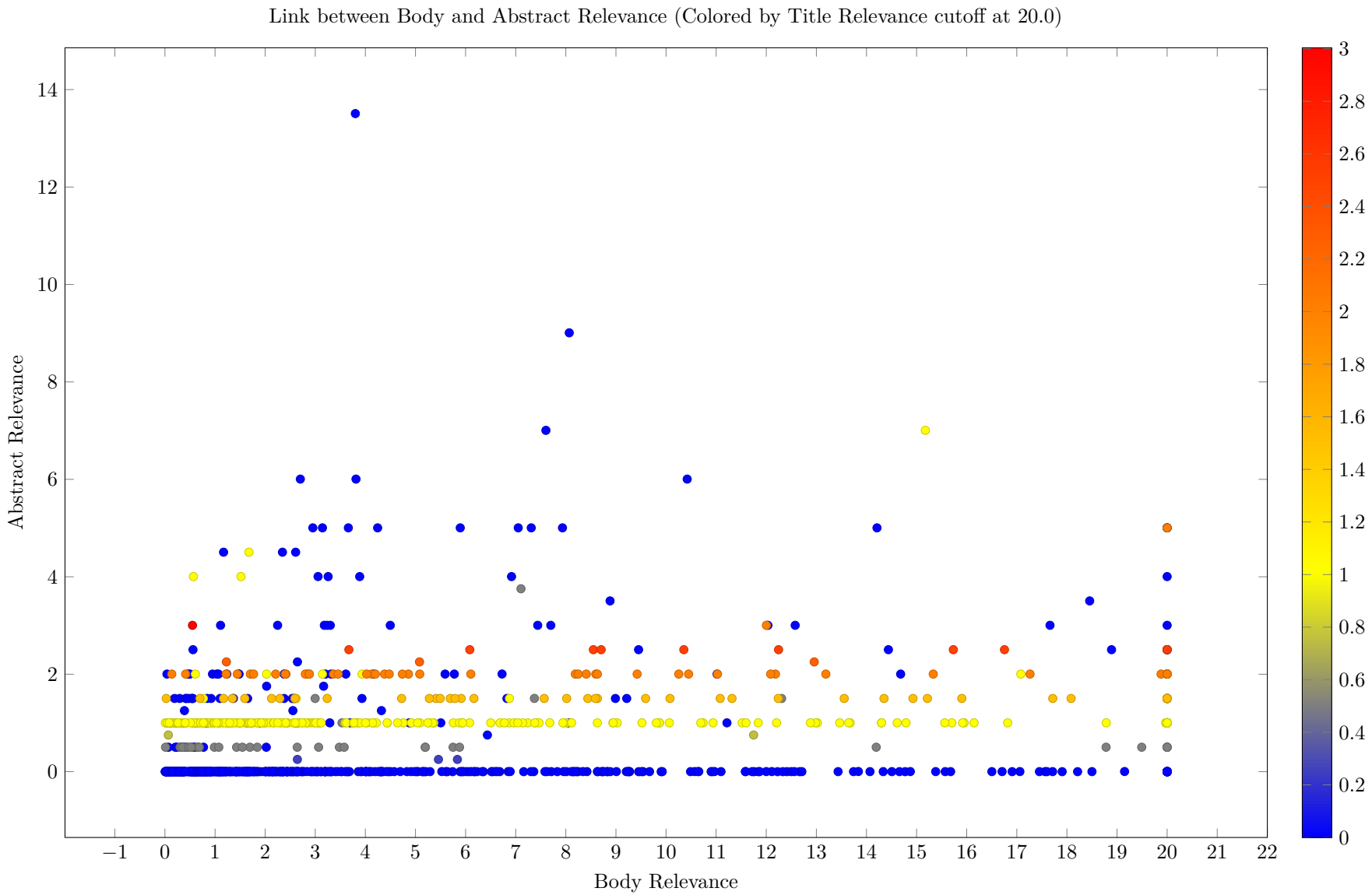

Percentage Contribution of Source Group Incoll to all published Work in Year (Colored by number in group)
Percentage
Year
10
9
8
7
6
5
4
3
2
1
0
1,974 1,976 1,978 1,980 1,982 1,984 1,986 1,988 1,990 1,992 1,994 1,996 1,998 2,000 2,002 2,004 2,006 2,008 2,010 2,012 2,014 2,016 2,018 2,020 2,022 2,024 2,026 2,028
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0

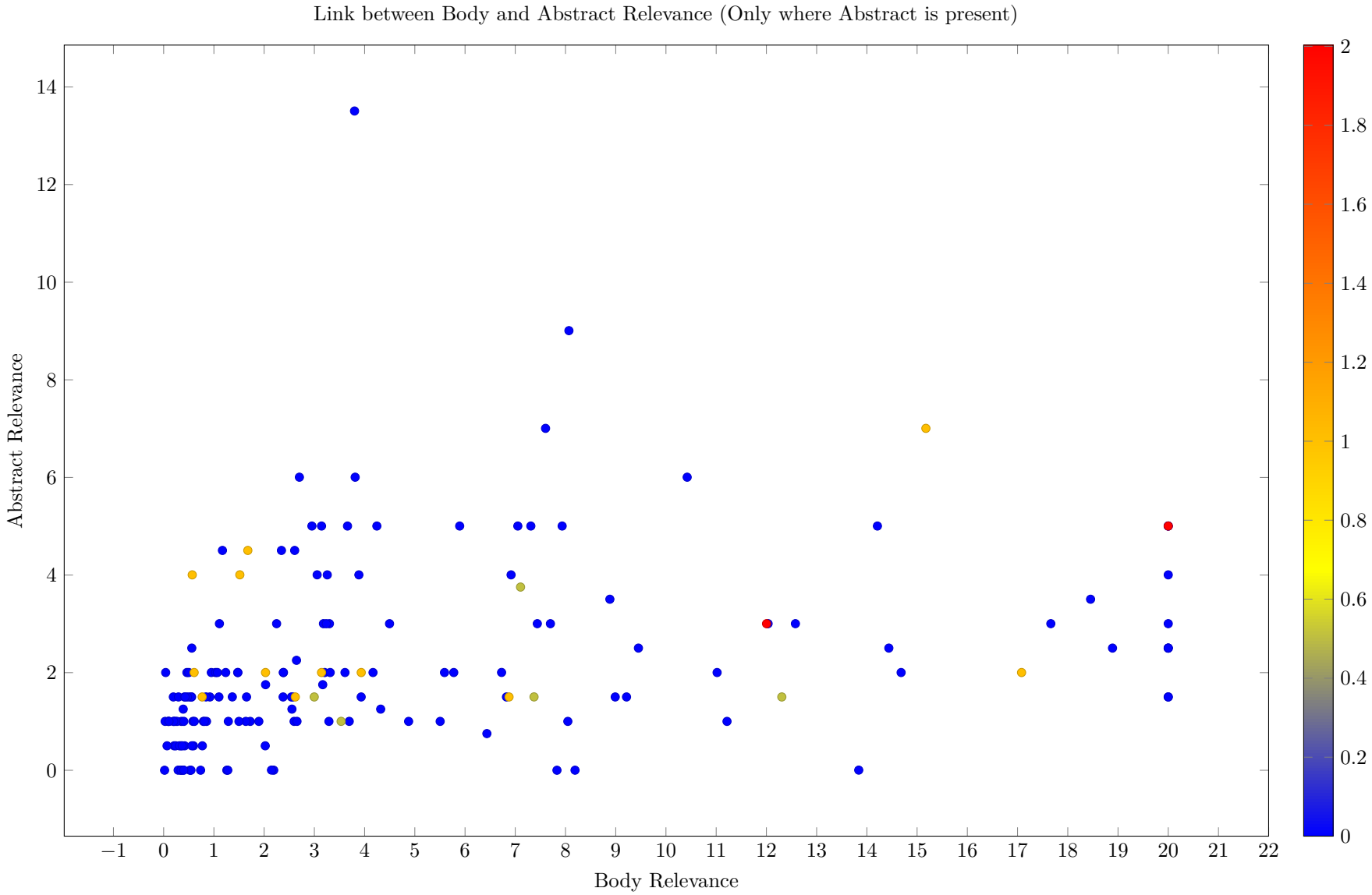

Percentage Contribution of Source Group Thesis to all published Work in Year (Colored by number in group)
Percentage
0
1
2
3
4
5
6
7
8
Year
1,974 1,976 1,978 1,980 1,982 1,984 1,986 1,988 1,990 1,992 1,994 1,996 1,998 2,000 2,002 2,004 2,006 2,008 2,010 2,012 2,014 2,016 2,018 2,020 2,022 2,024 2,026 2,028
0
0.5
1
1.5
2
2.5
3
3.5
4
4.5
5

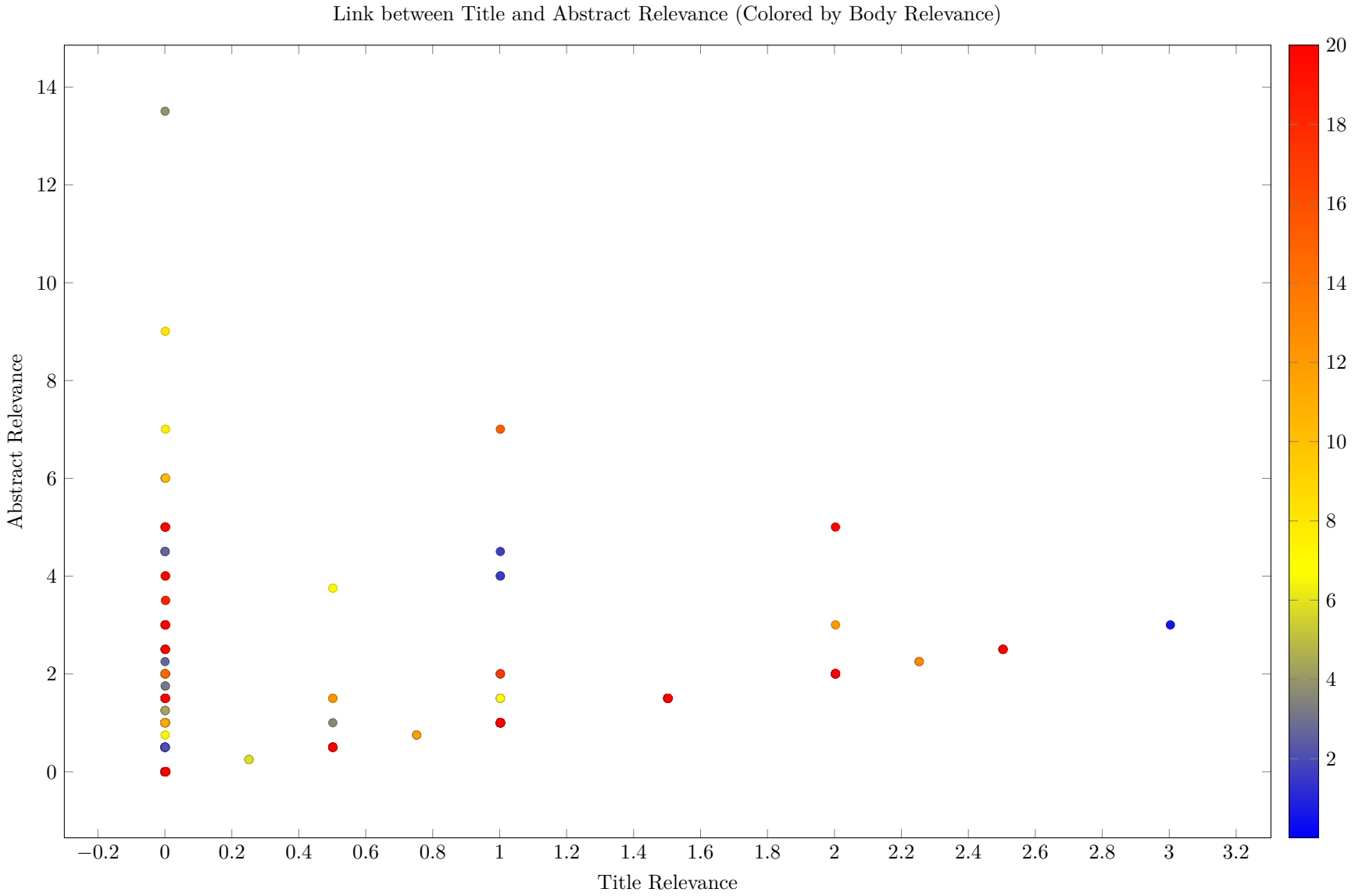
17 Page Length Distribution

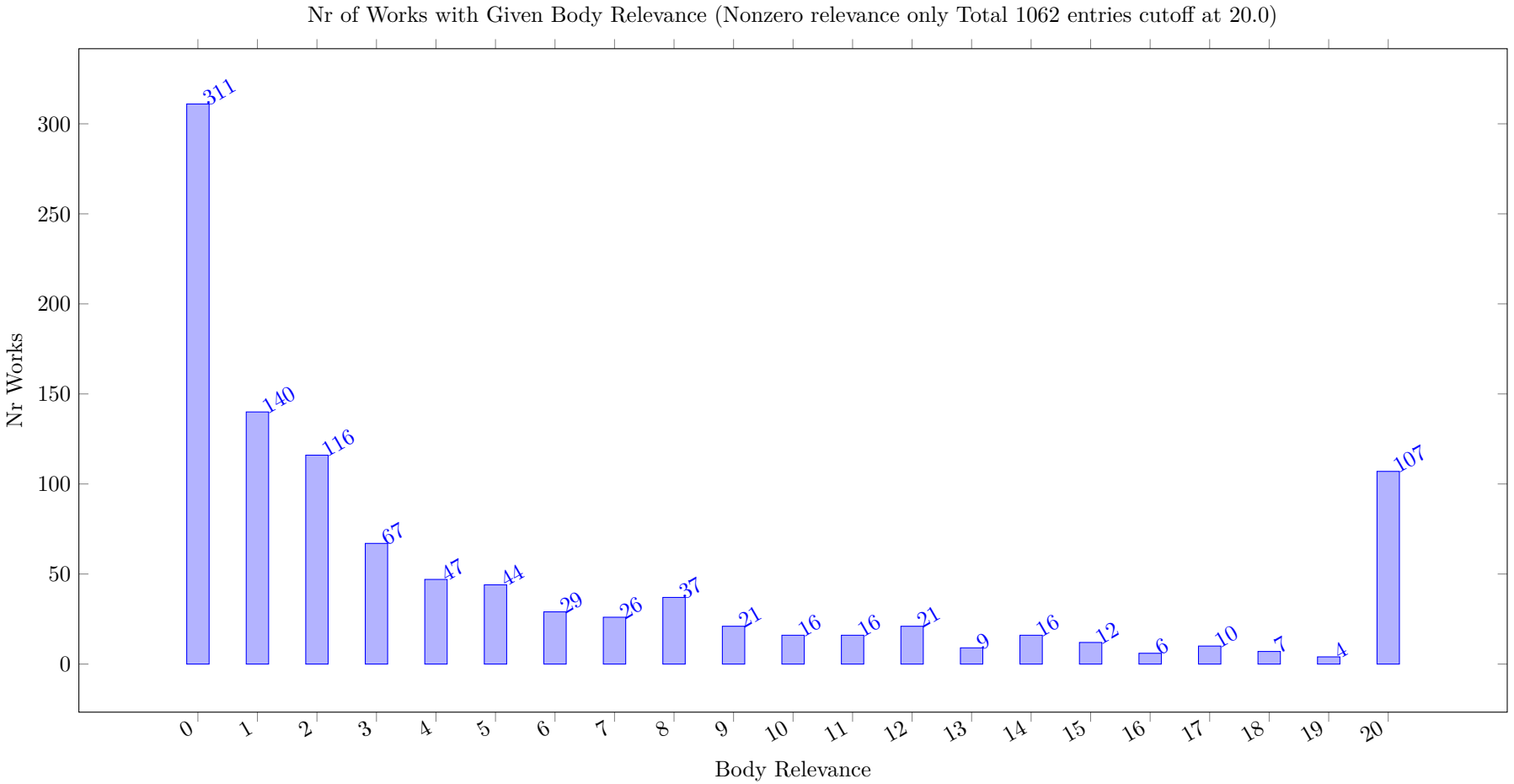


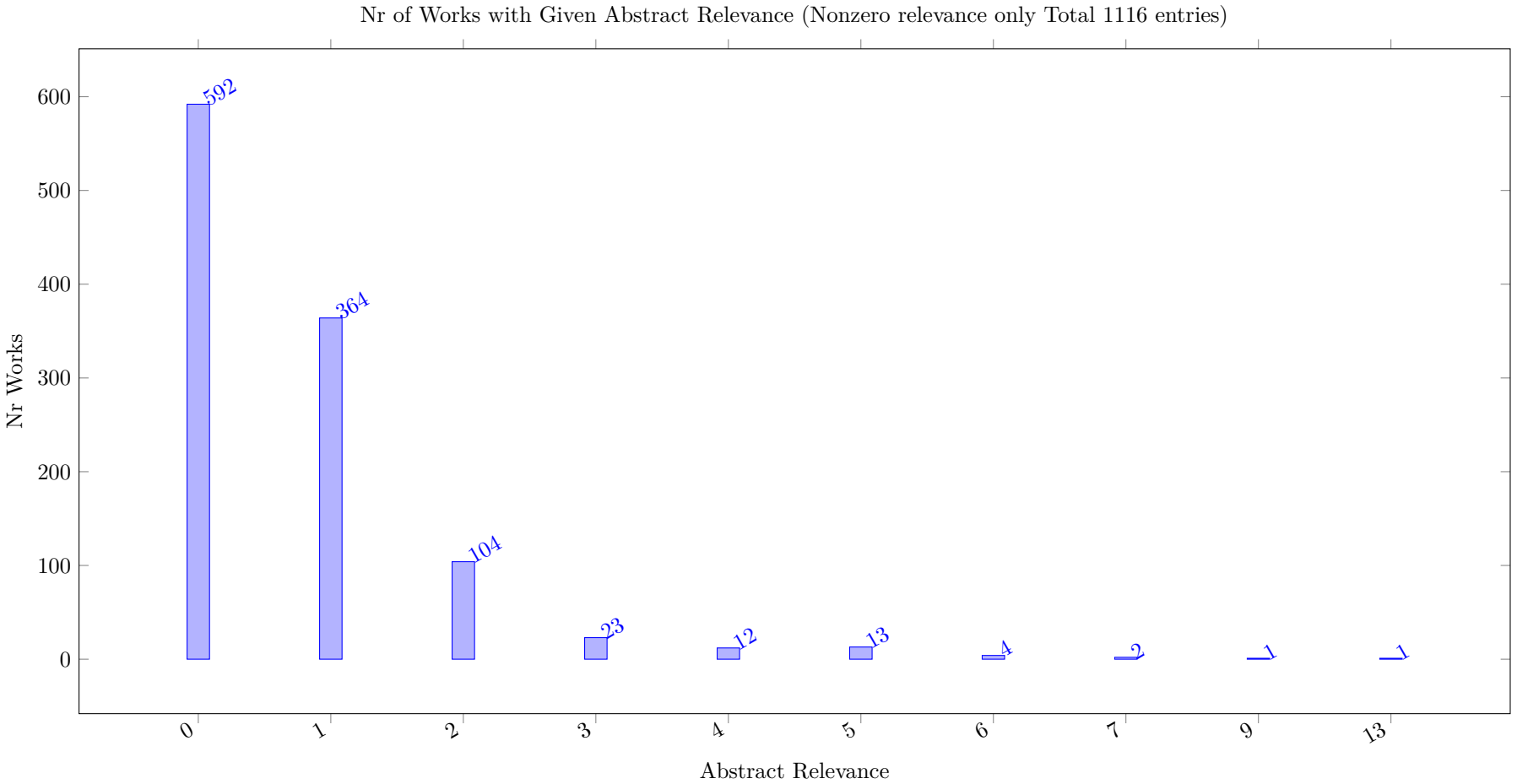
18 Relevance Distribution

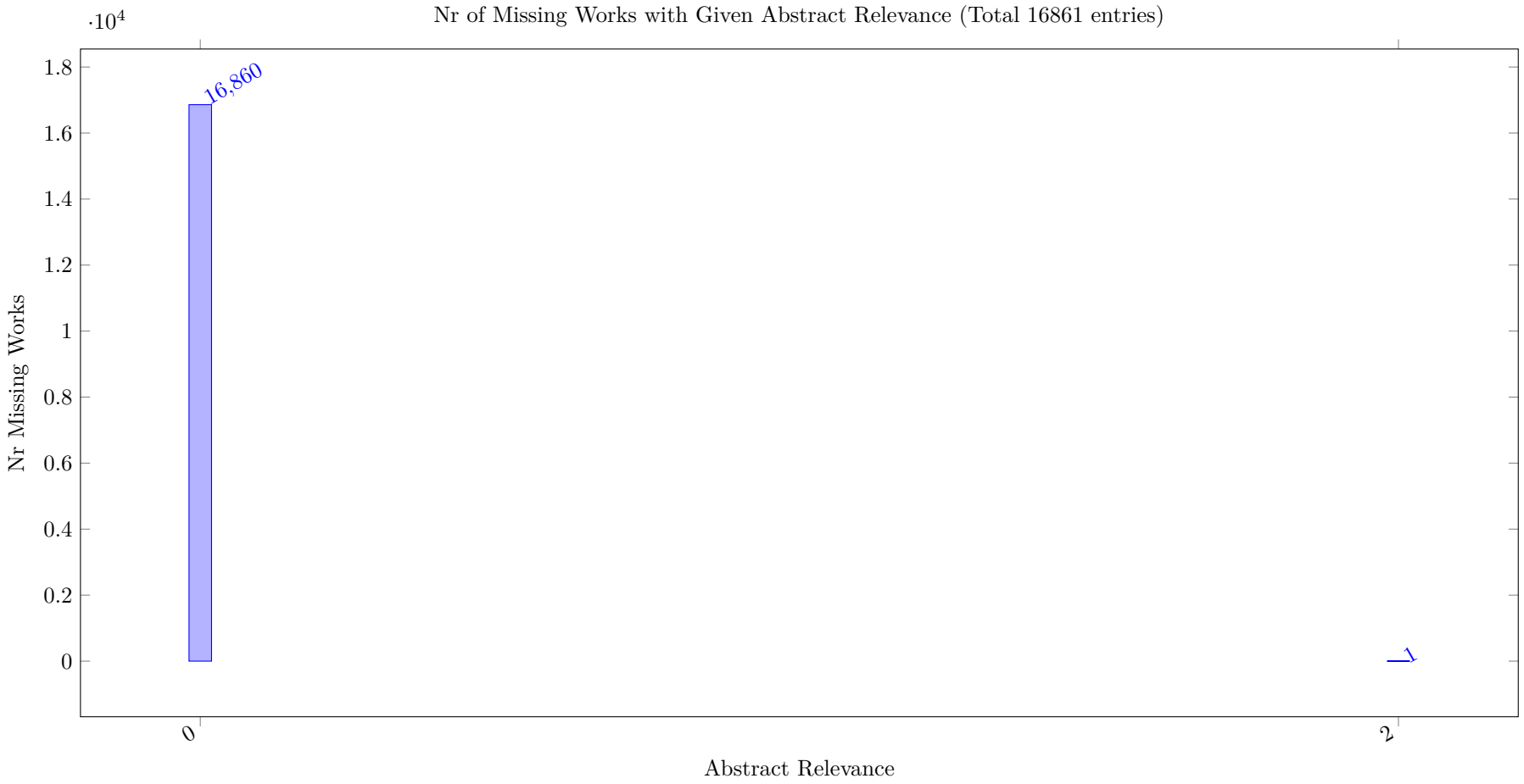



Link between Body and Abstract Relevance (Only where Abstract is present)
Abstract Relevance
Body Relevance
0
2
4
6
8
10
12
14
−1
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8
2


Link between Title and Abstract Relevance (Colored by Body Relevance)
Abstract Relevance
Title Relevance
0
2
4
6
8
10
12
14
−0.2
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8
2
2.2
2.4
2.6
2.8
3
3.2
2
4
6
8
10
12
14
16
18
20


Nr of Works with Given Body Relevance (Nonzero relevance only Total 1062 entries cutoff at 20.0)
Nr Works
0
50
100
150
200
250
300
311
140
116
67
47
44
29
26
37
21
16
16
21
9
16
12
6
10
7
4
107
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
Body Relevance


Nr of Works with Given Abstract Relevance (Nonzero relevance only Total 1116 entries)
Nr Works
0
100
200
300
400
500
600
592
364
104
23
12
13
4
2
1
1
0
1
2
3
4
5
6
7
9
13
Abstract Relevance


Nr of Missing Works with Given Abstract Relevance (Total 16861 entries)
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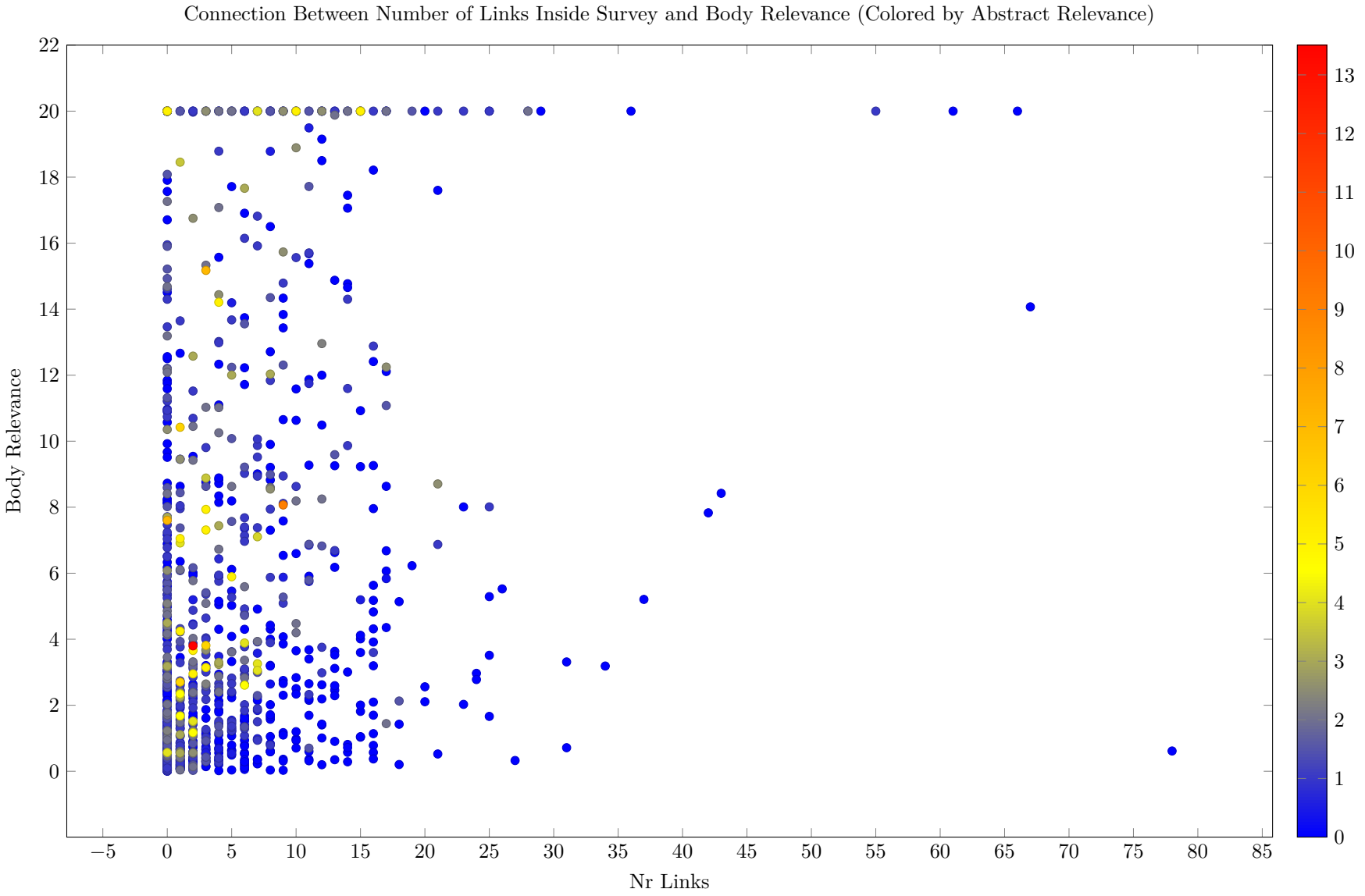
Abstract Relevance


Connection Between Number of Links Inside Survey and Body Relevance (Colored by Abstract Relevance)
Body Relevance
Nr Links
22
20
18
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2
0
−5
0
5
10
15
20
25
30
35
40
45
50
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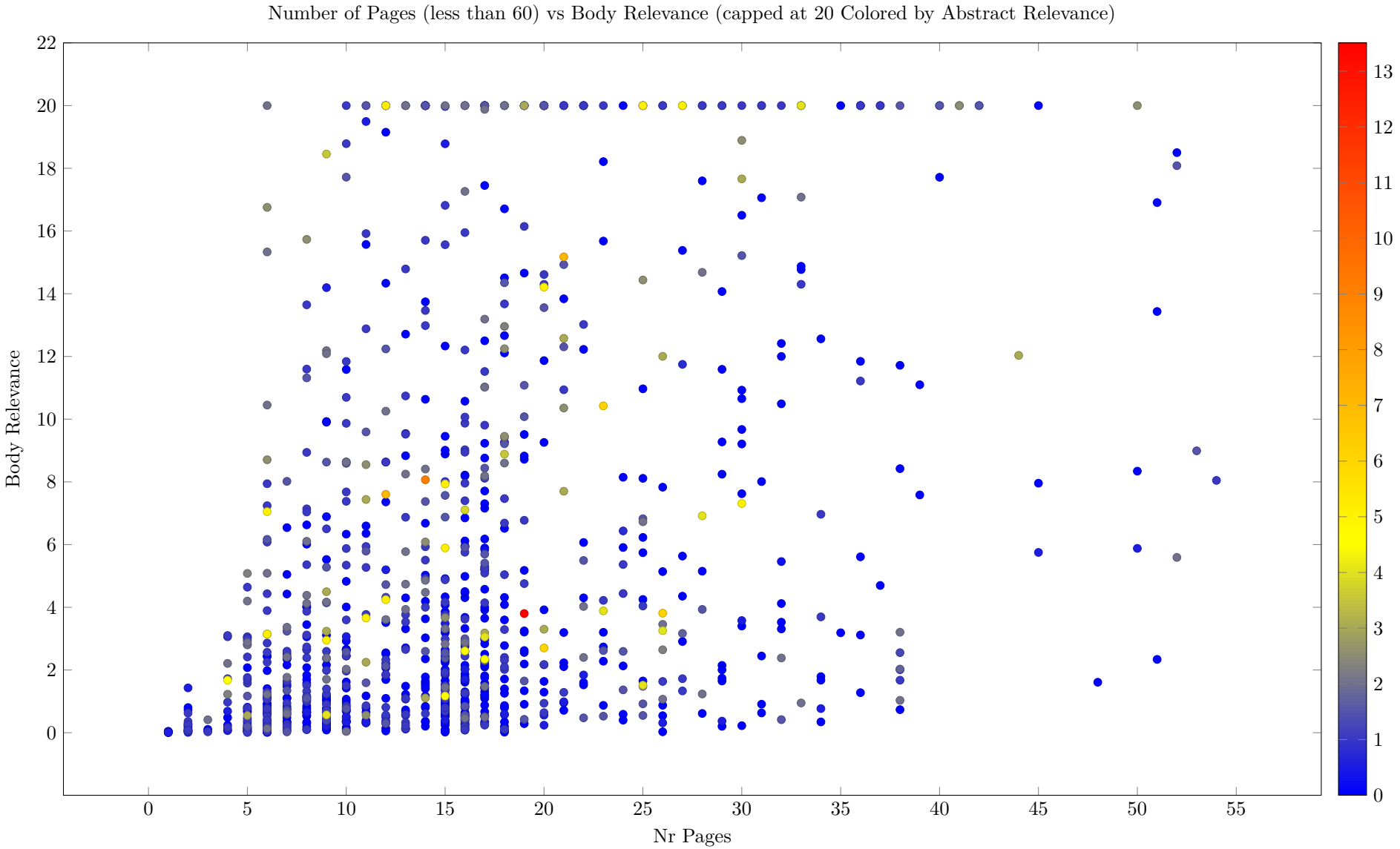
Number of Pages (less than 60) vs Body Relevance (capped at 20 Colored by Abstract Relevance)
Body Relevance
Nr Pages
0
2
4
6
8
10
12
14
16
18
20
22
0
5
10
15
20
25
30
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50
55
0
1
2
3
4
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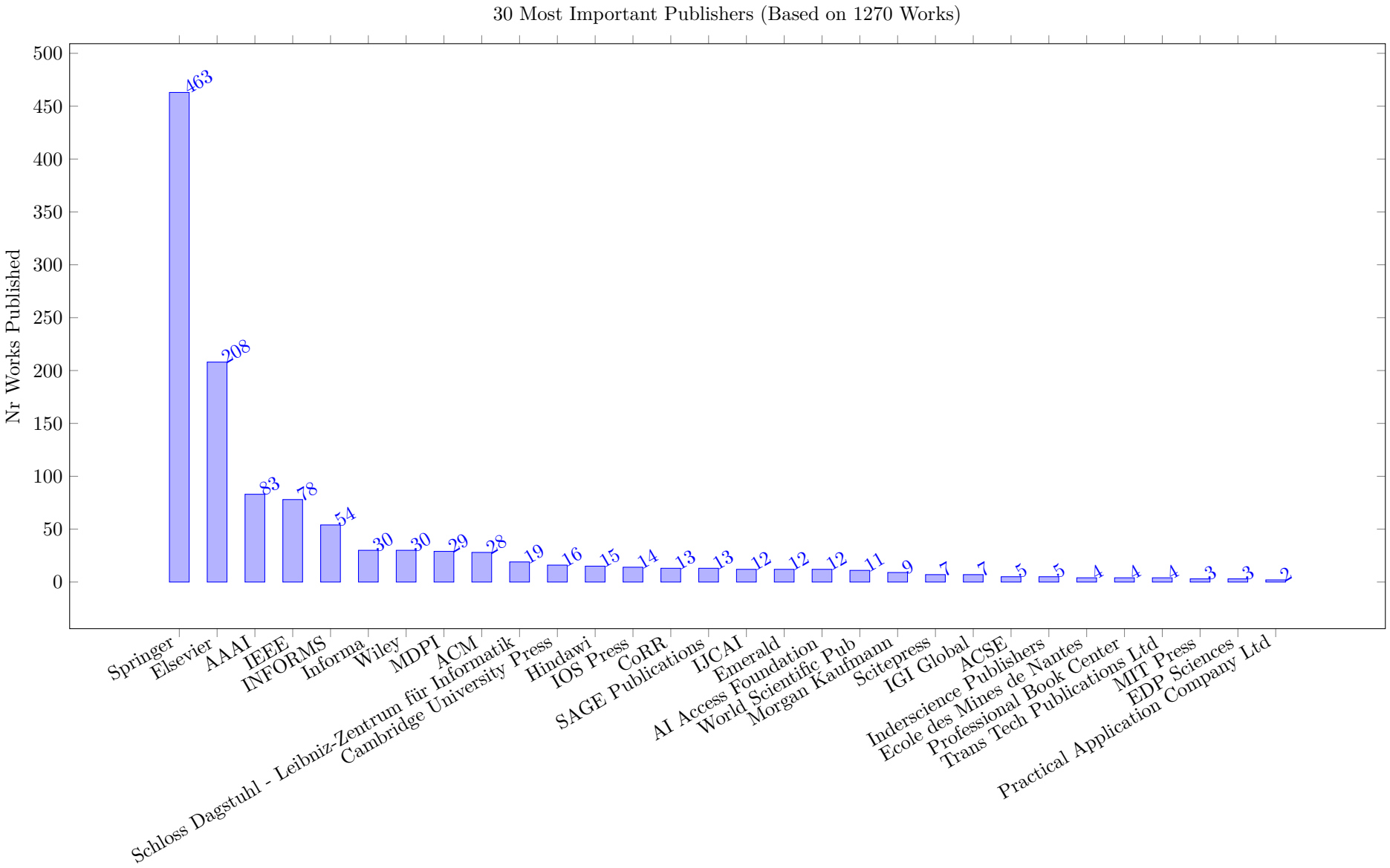
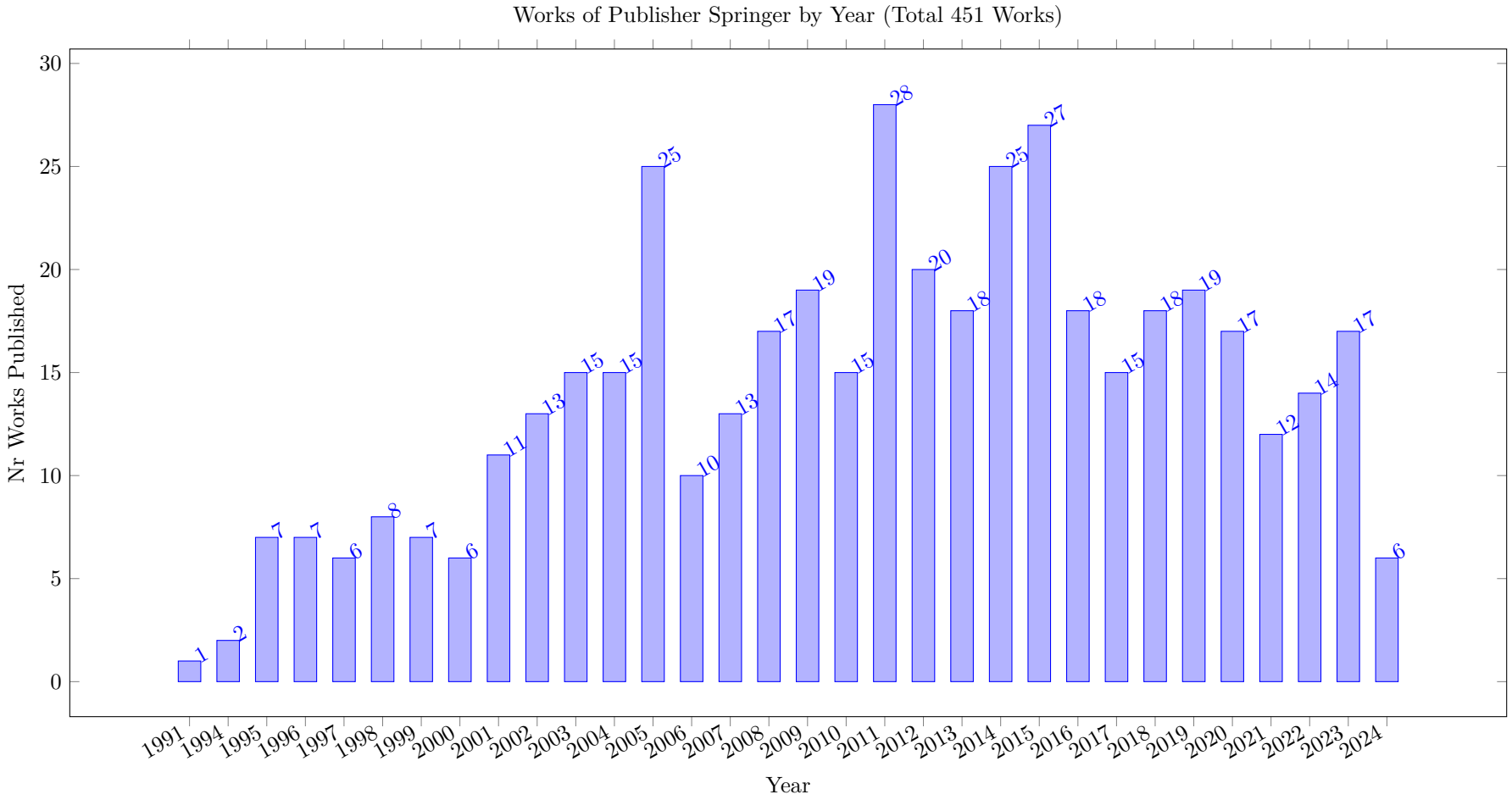
6
7
8
9
10
11
12
13

19 Most Important Publishers




Works of Publisher Springer by Year (Total 451 Works)
Nr Works Published
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0
5
10
15
20
25
30
1991 1
1994 2
1995 7
1996 7
1997 6
1998 8
1999 7
2000 6
2001 11
2002 13
2003 15
2004 15
2005 25
2006 10
2007 13
2008 17
2009 19
2010 15
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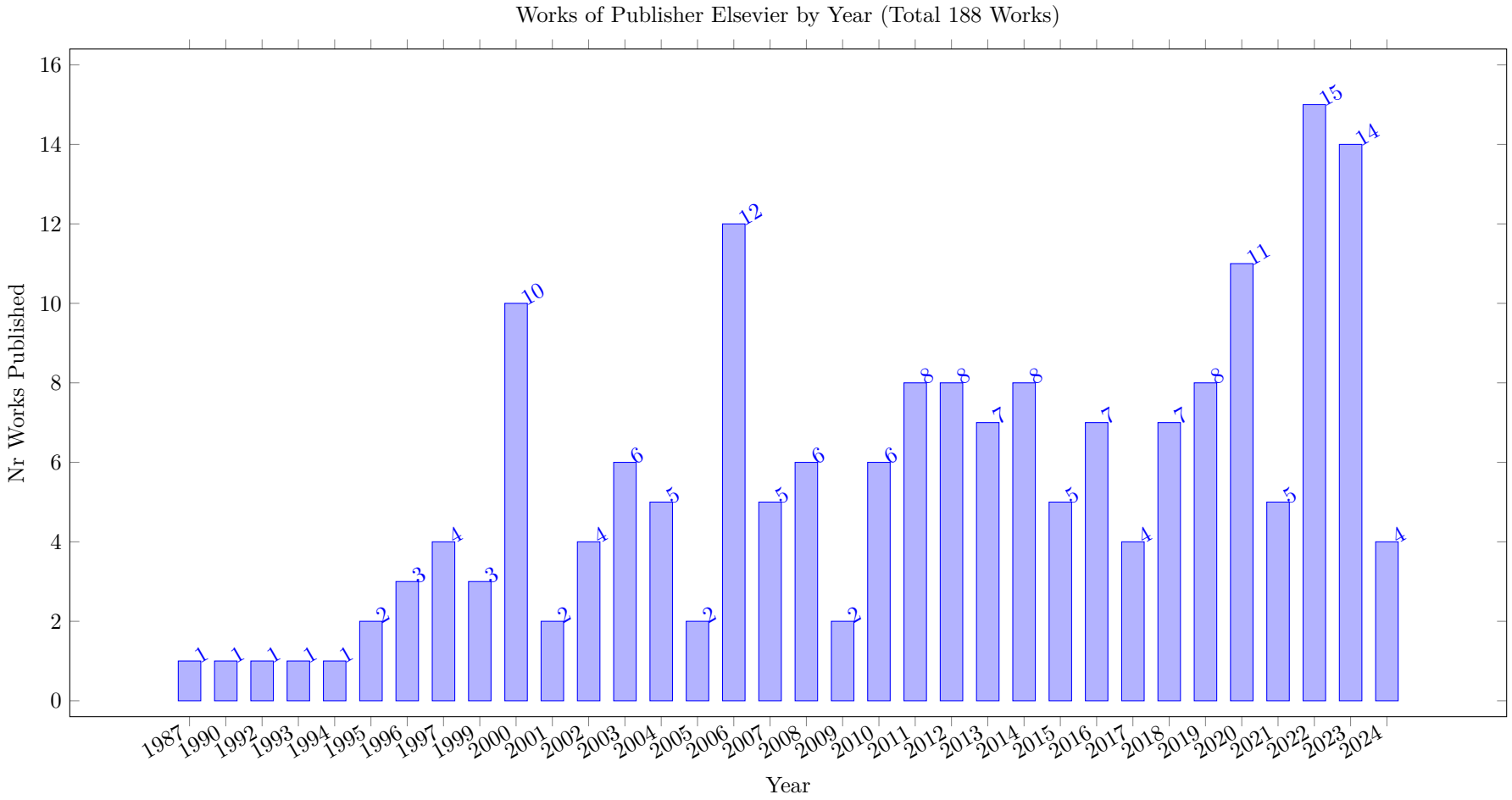
2021 12
2022 14
2023 17
2024 6


Works of Publisher Elsevier by Year (Total 188 Works)
Nr Works Published
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6
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12
14
16
1987 1990 1992 1993 1994 1995 1996 1997 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024
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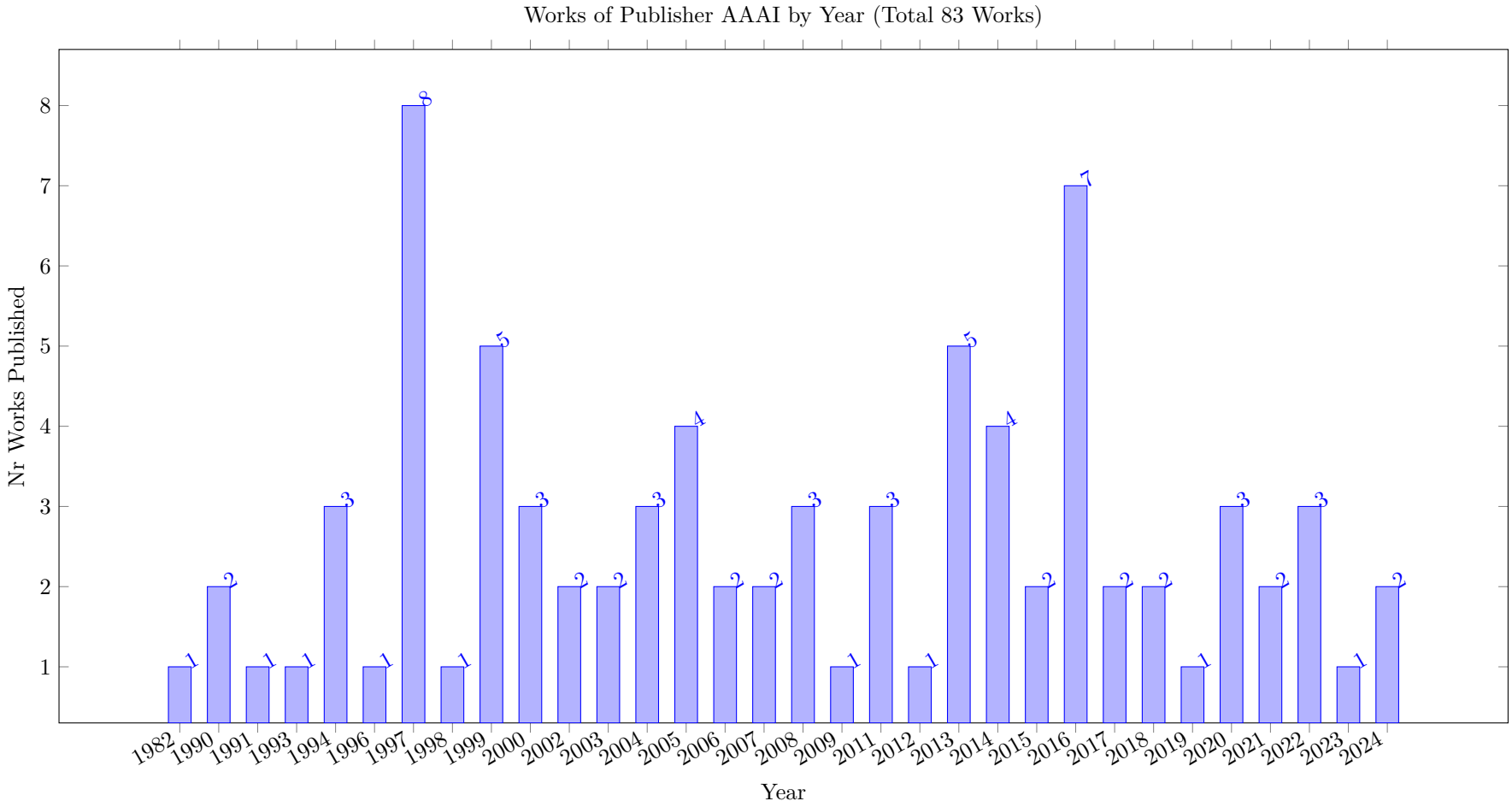
Works of Publisher AAAI by Year (Total 83 Works)
Nr Works Published
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2
3
4
5
6
7
8
1982 1990 1991 1993 1994 1996 1997 1998 1999 2000 2002 2003 2004 2005 2006 2007 2008 2009 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024
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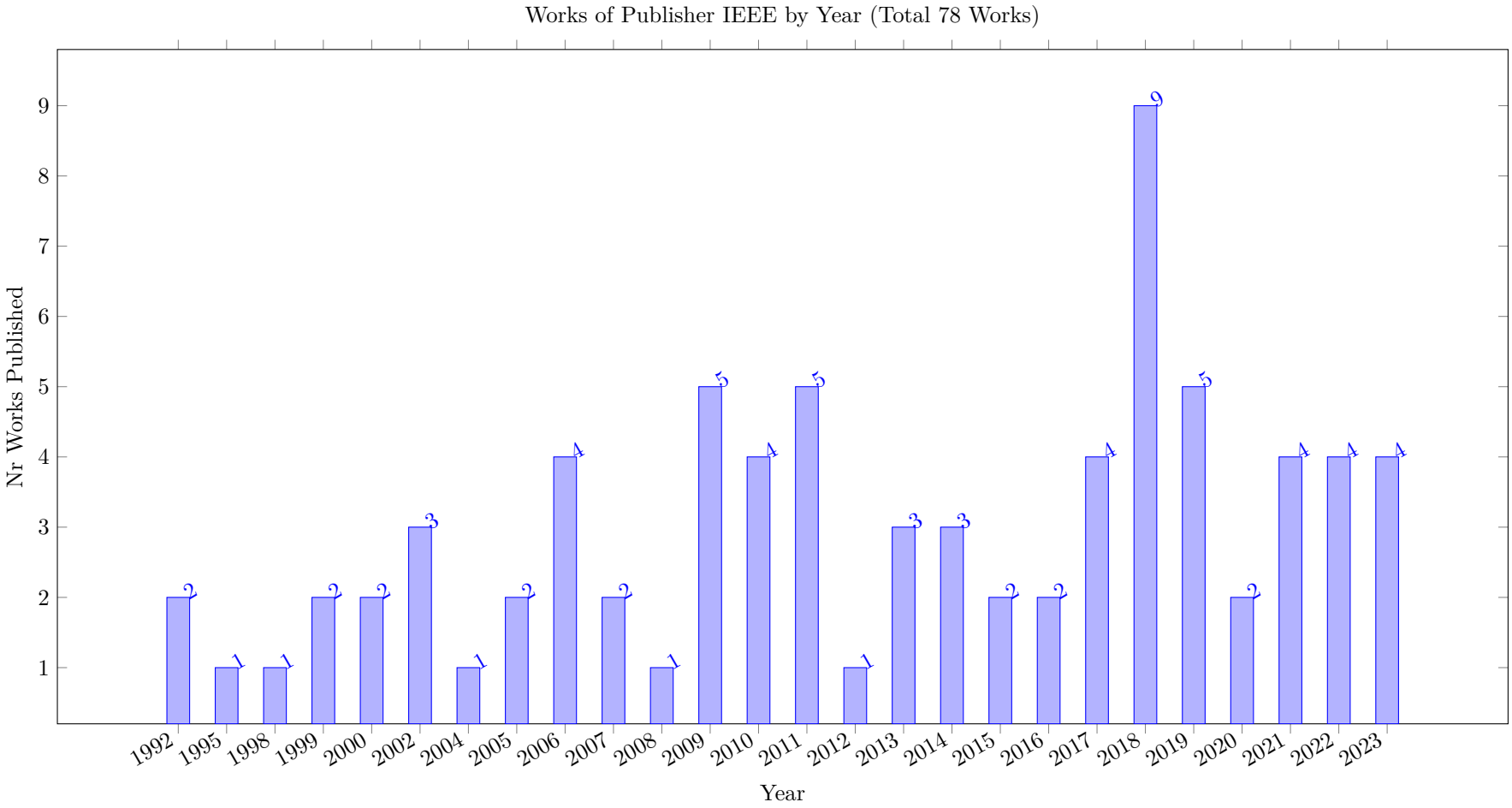
Works of Publisher IEEE by Year (Total 78 Works)
Nr Works Published
Year
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1992 1995 1998 1999 2000 2002 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023
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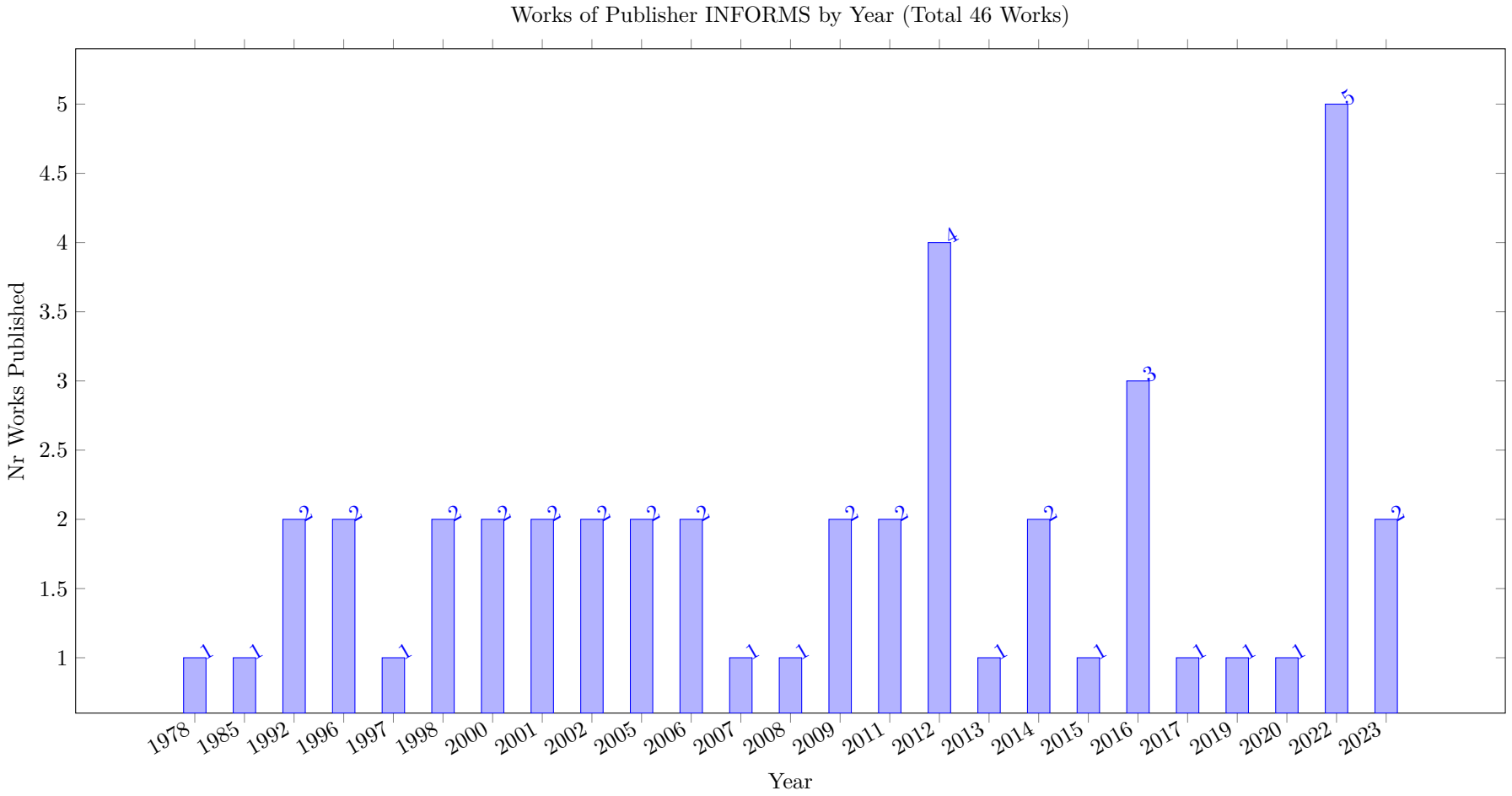
Works of Publisher INFORMS by Year (Total 46 Works)
Nr Works Published
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3.5
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1978
1985
1992
1996
1997
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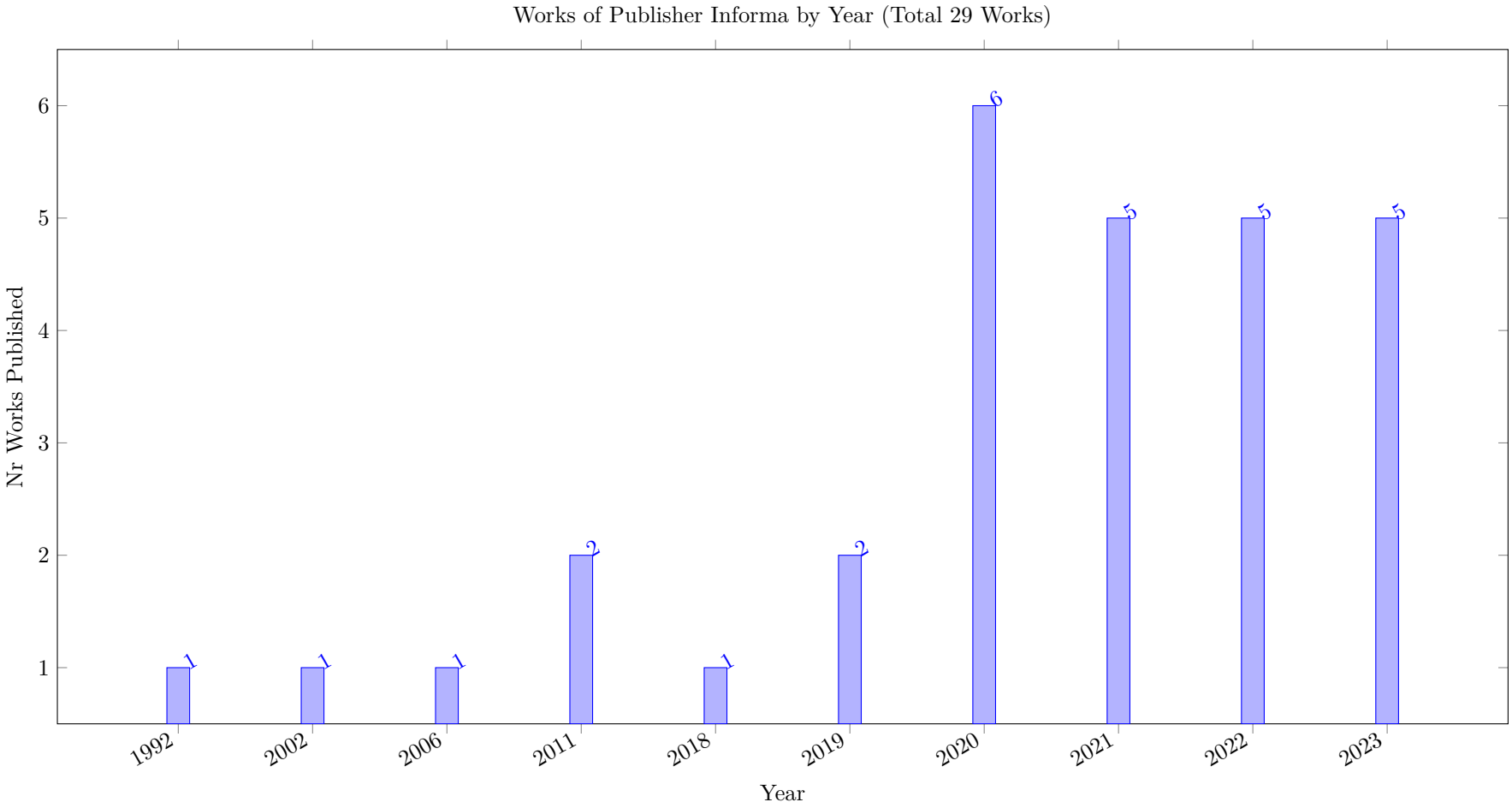
2022
2023


Works of Publisher Informa by Year (Total 29 Works)
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3
4
5
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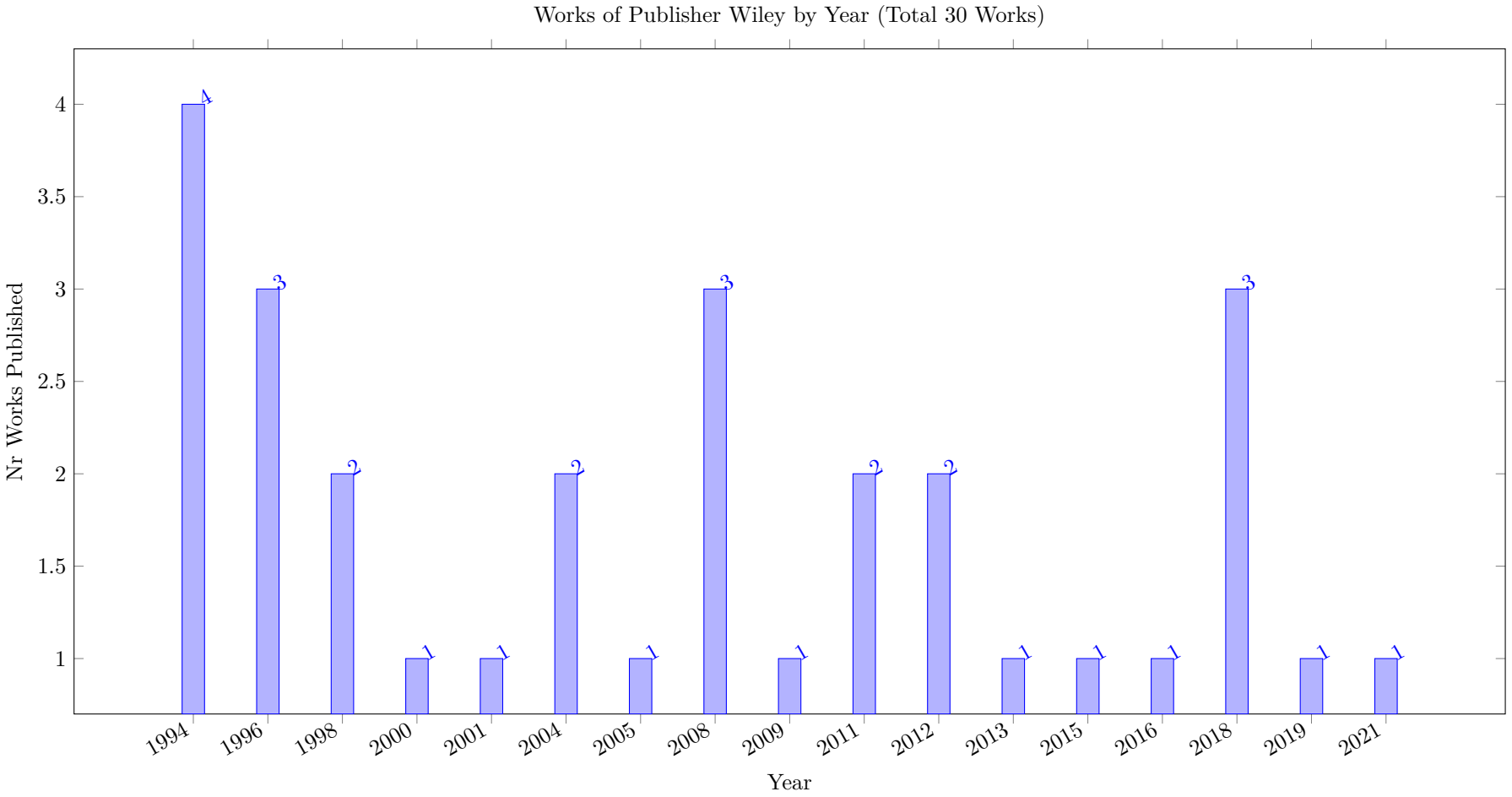
2018
2019
2020
2021
2022
2023


Works of Publisher Wiley by Year (Total 30 Works)
Nr Works Published
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2
2.5
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3.5
4
1994
1996
1998
2000
2001
2004
2005
2008
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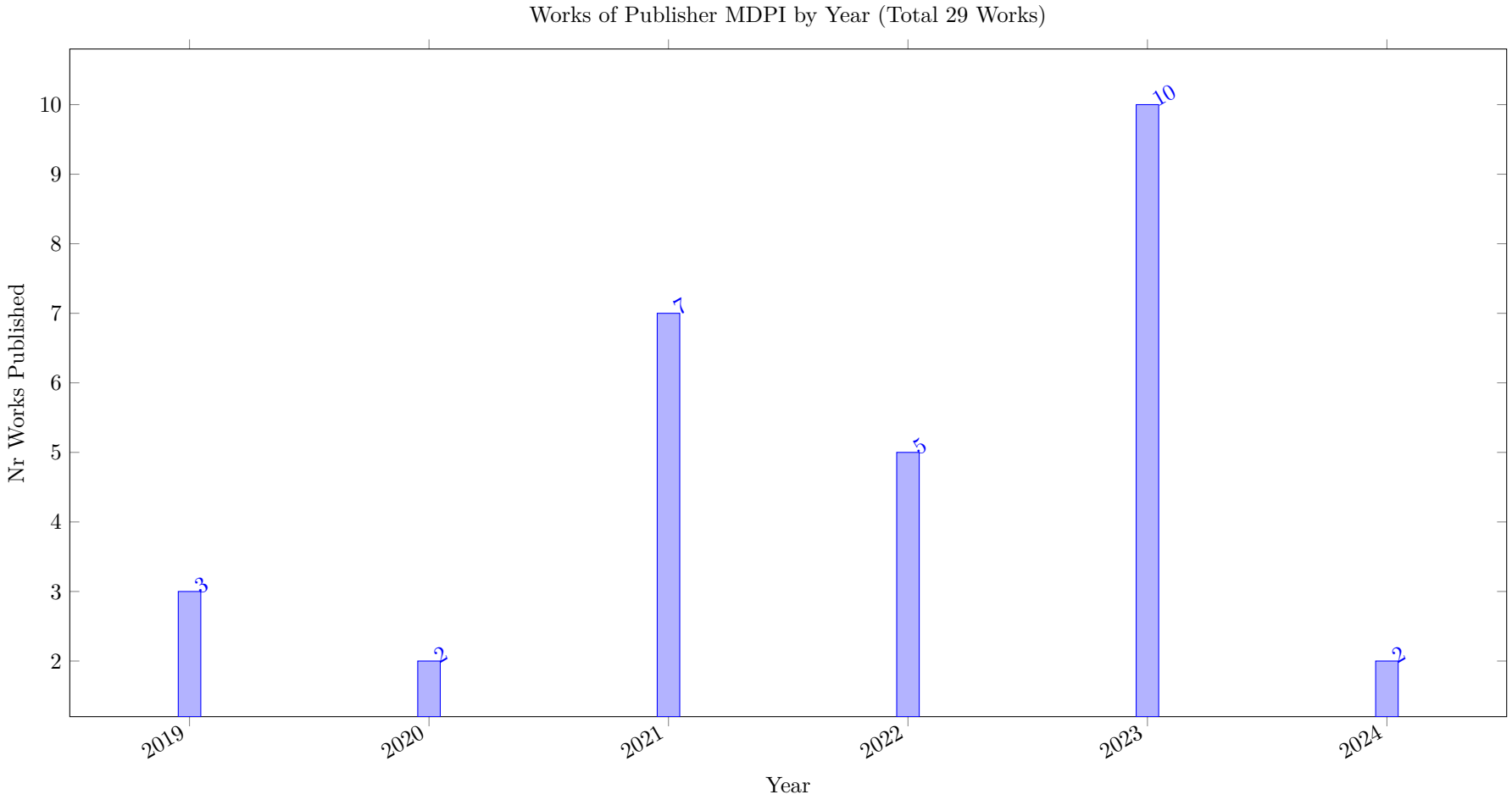
Works of Publisher MDPI by Year (Total 29 Works)
Nr Works Published
Year
2
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2020
2021
2022
2023
2024
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2
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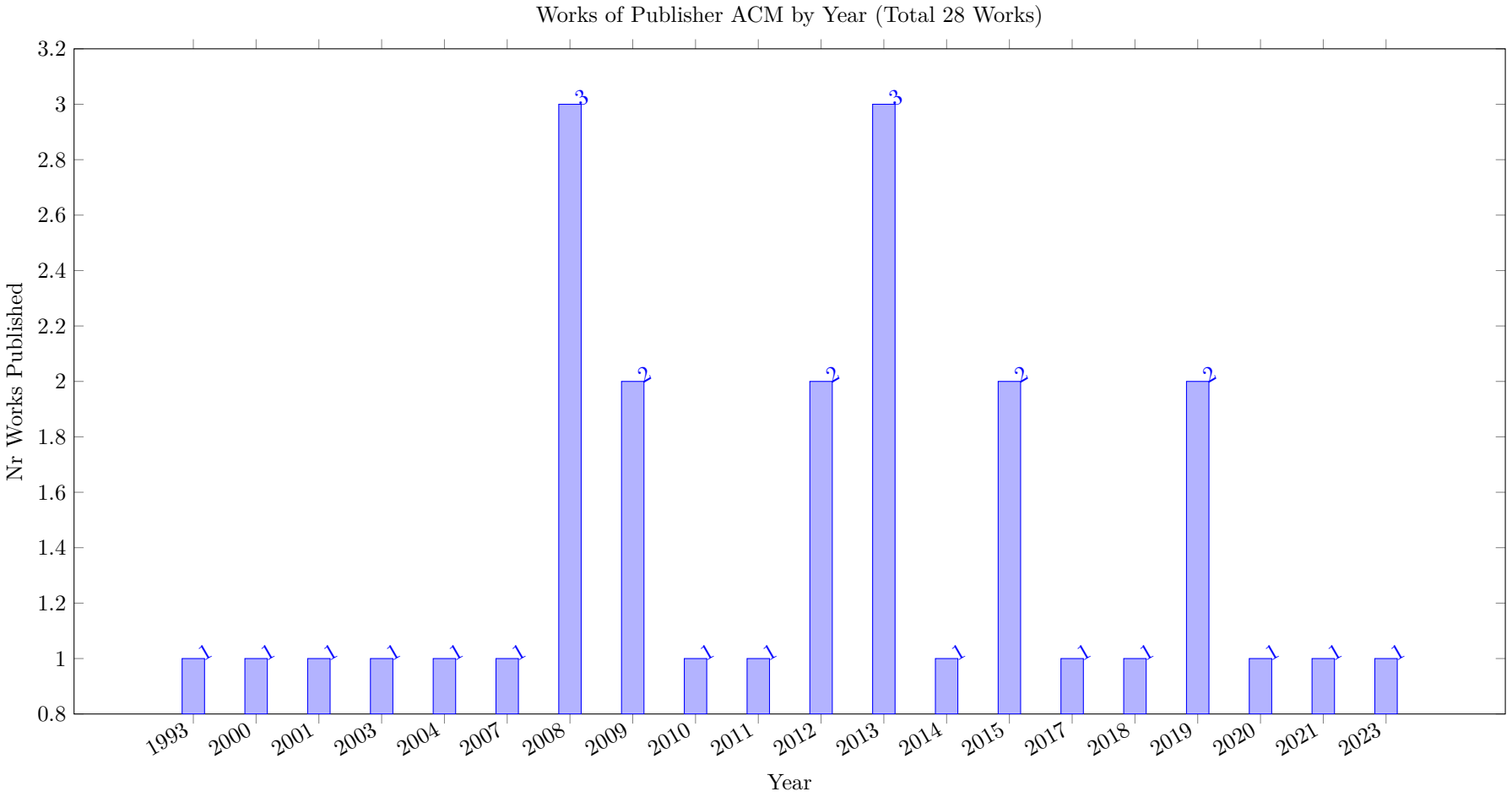
10
2


Works of Publisher ACM by Year (Total 28 Works)
Nr Works Published
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2.8
2.6
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2.2
2
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1.4
1.2
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1
1
1
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1993
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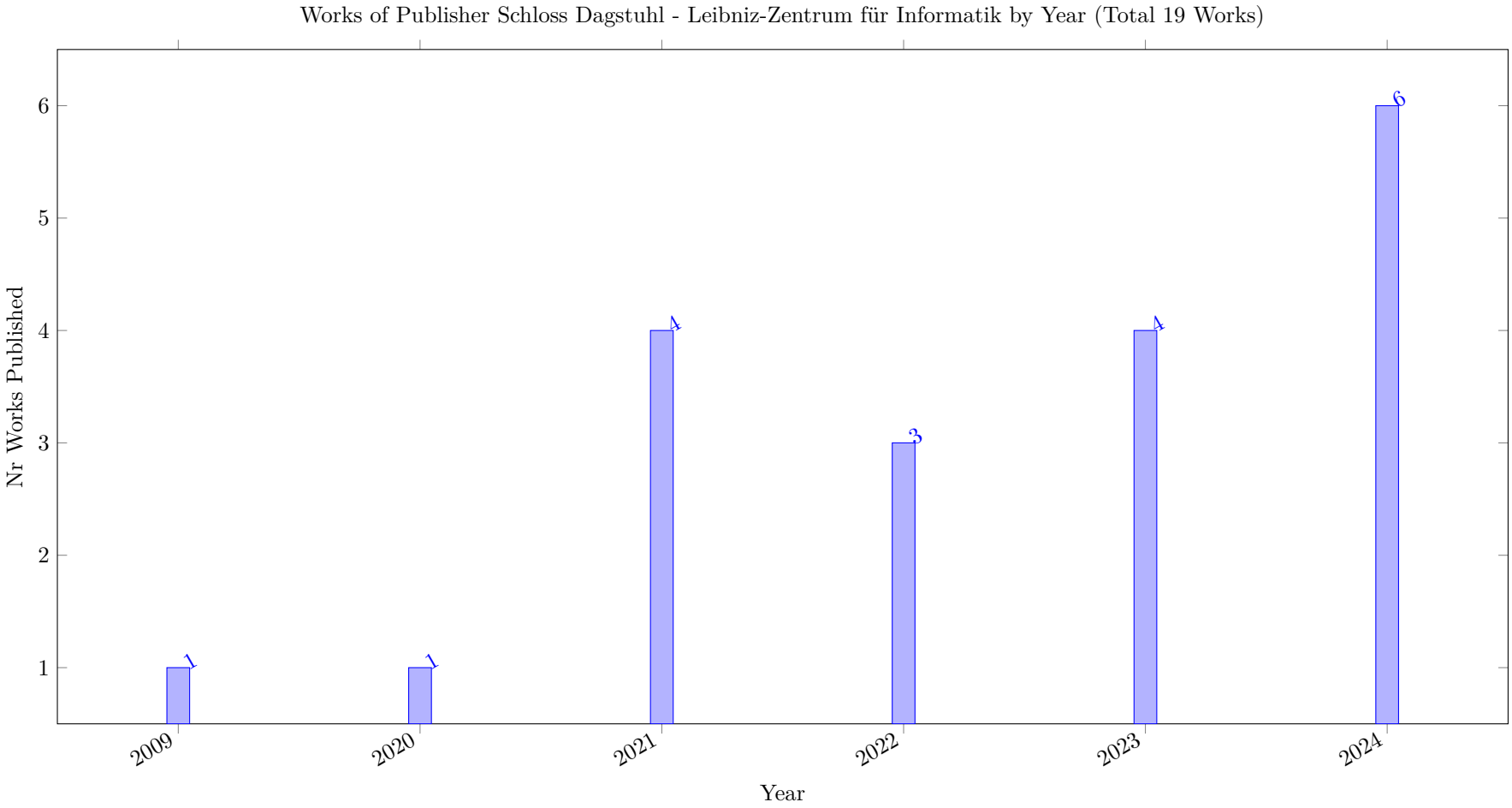
2023
Year


Works of Publisher Schloss Dagstuhl - Leibniz-Zentrum für Informatik by Year (Total 19 Works)
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6
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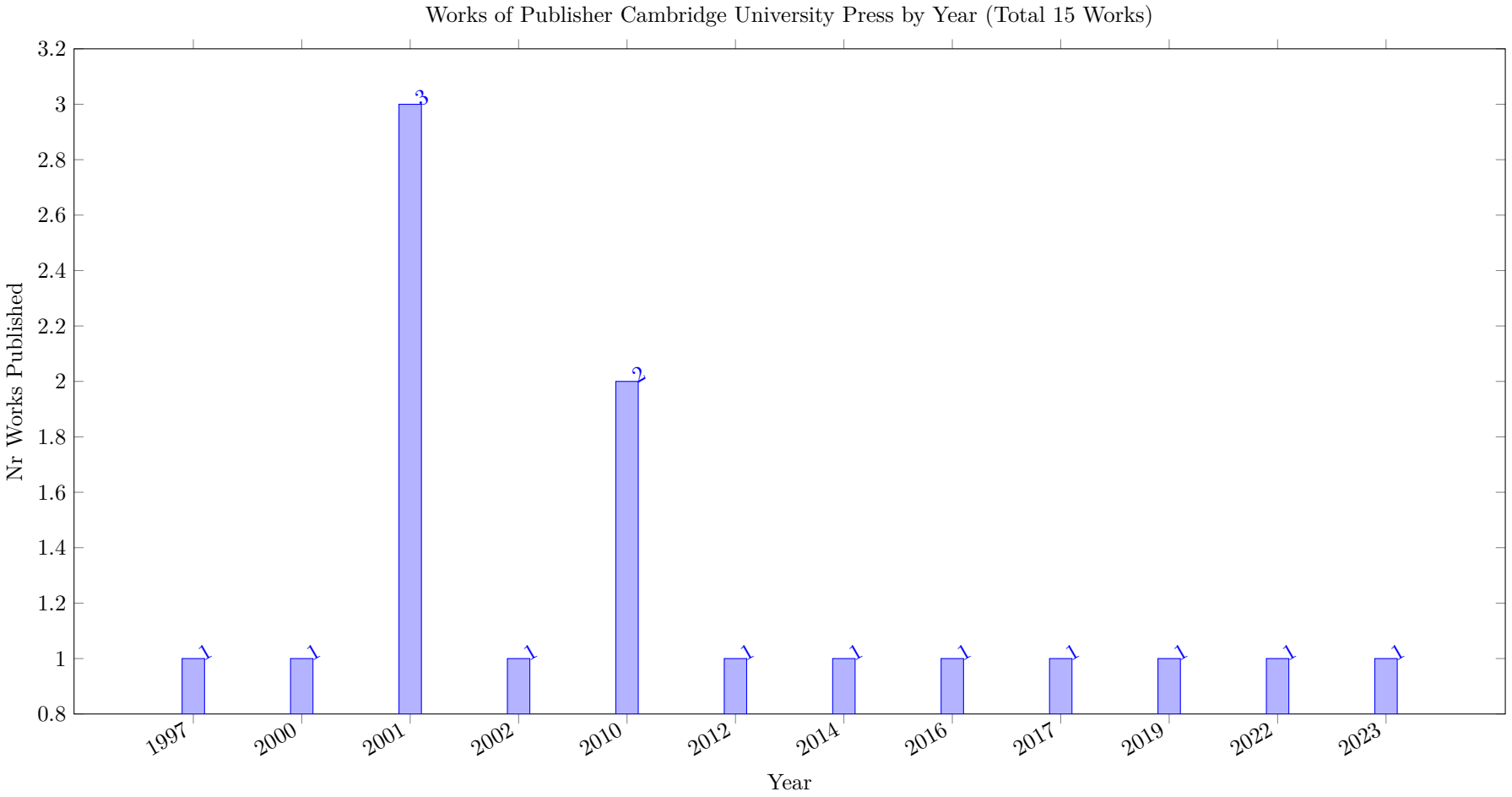
2020
2021
2022
2023
2024
Year


Works of Publisher Cambridge University Press by Year (Total 15 Works)
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3
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2.6
2.4
2.2
2
1.8
1.6
1.4
1.2
1
0.8
1997
2000
2001
2002
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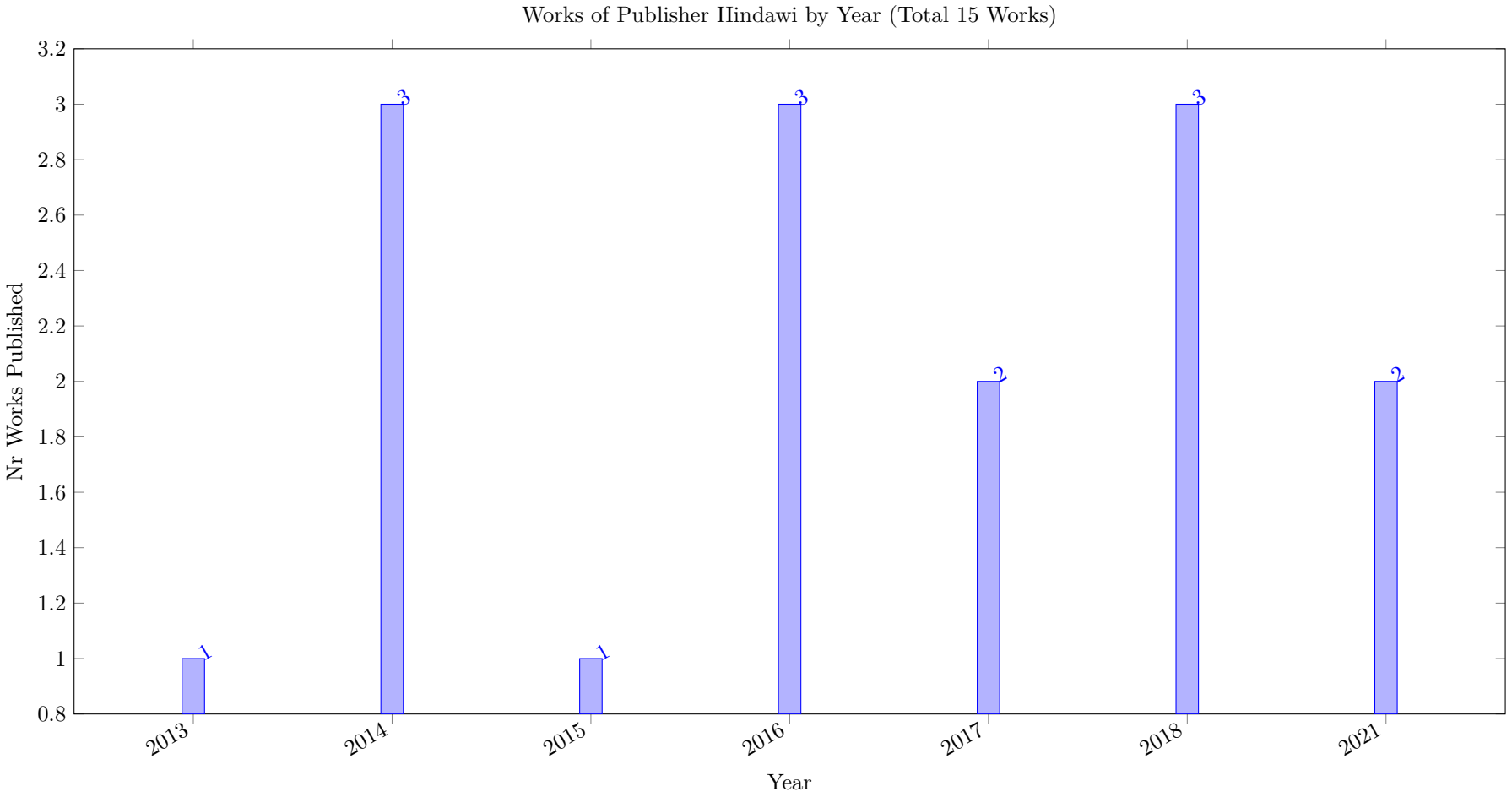
1


Works of Publisher Hindawi by Year (Total 15 Works)
Nr Works Published
Year
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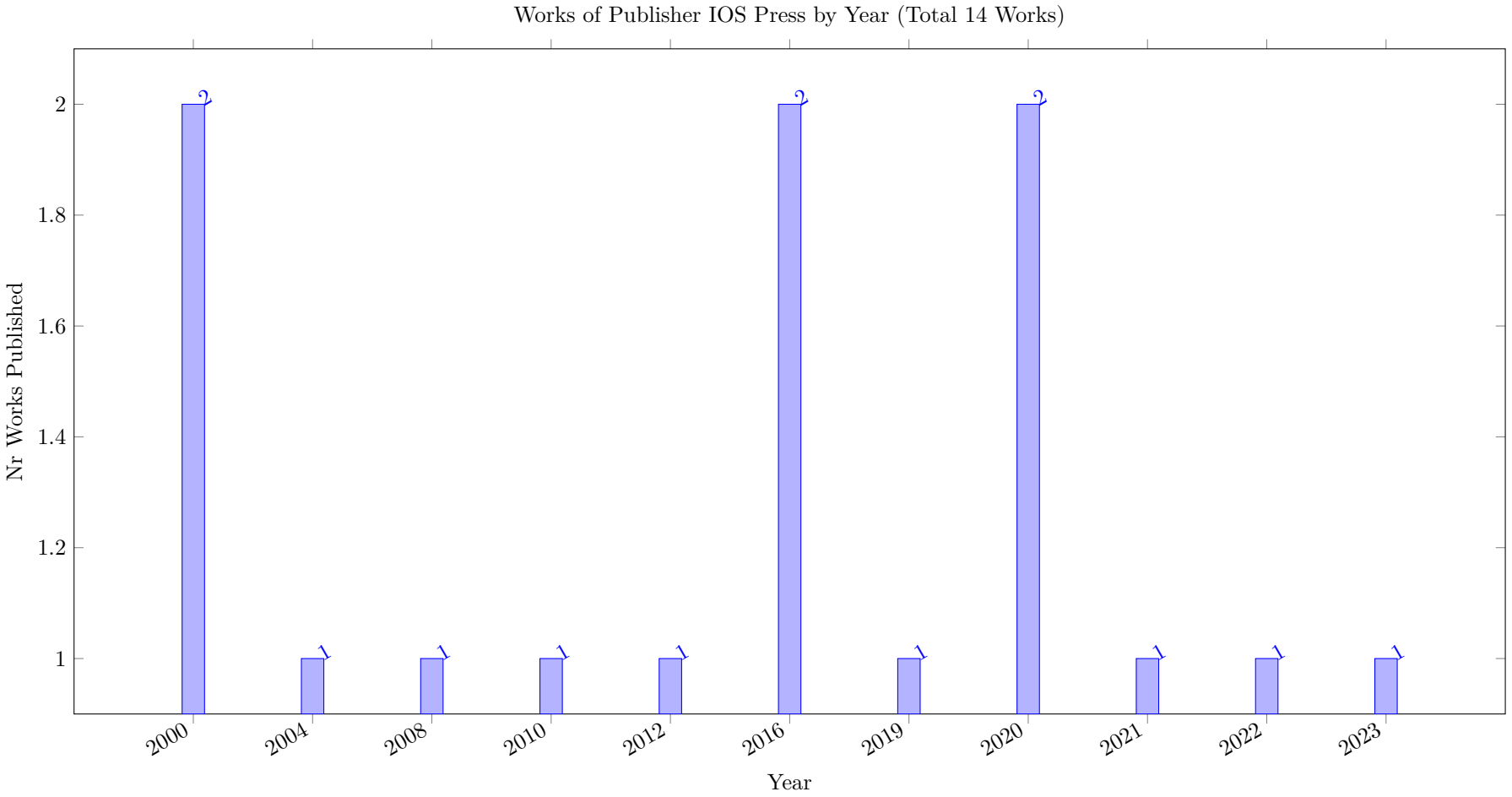
Works of Publisher IOS Press by Year (Total 14 Works)
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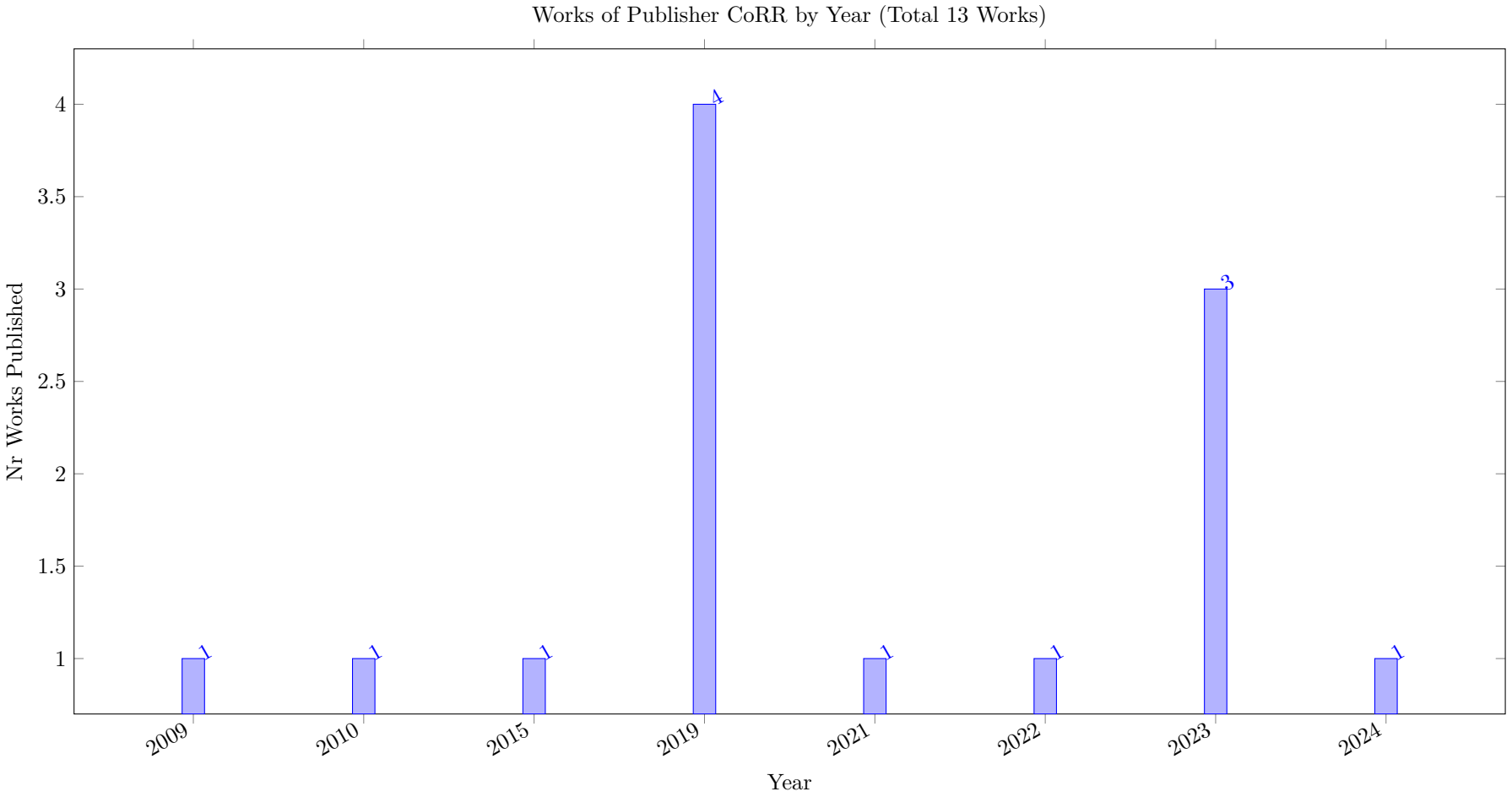
2022
2023
Year


Works of Publisher CoRR by Year (Total 13 Works)
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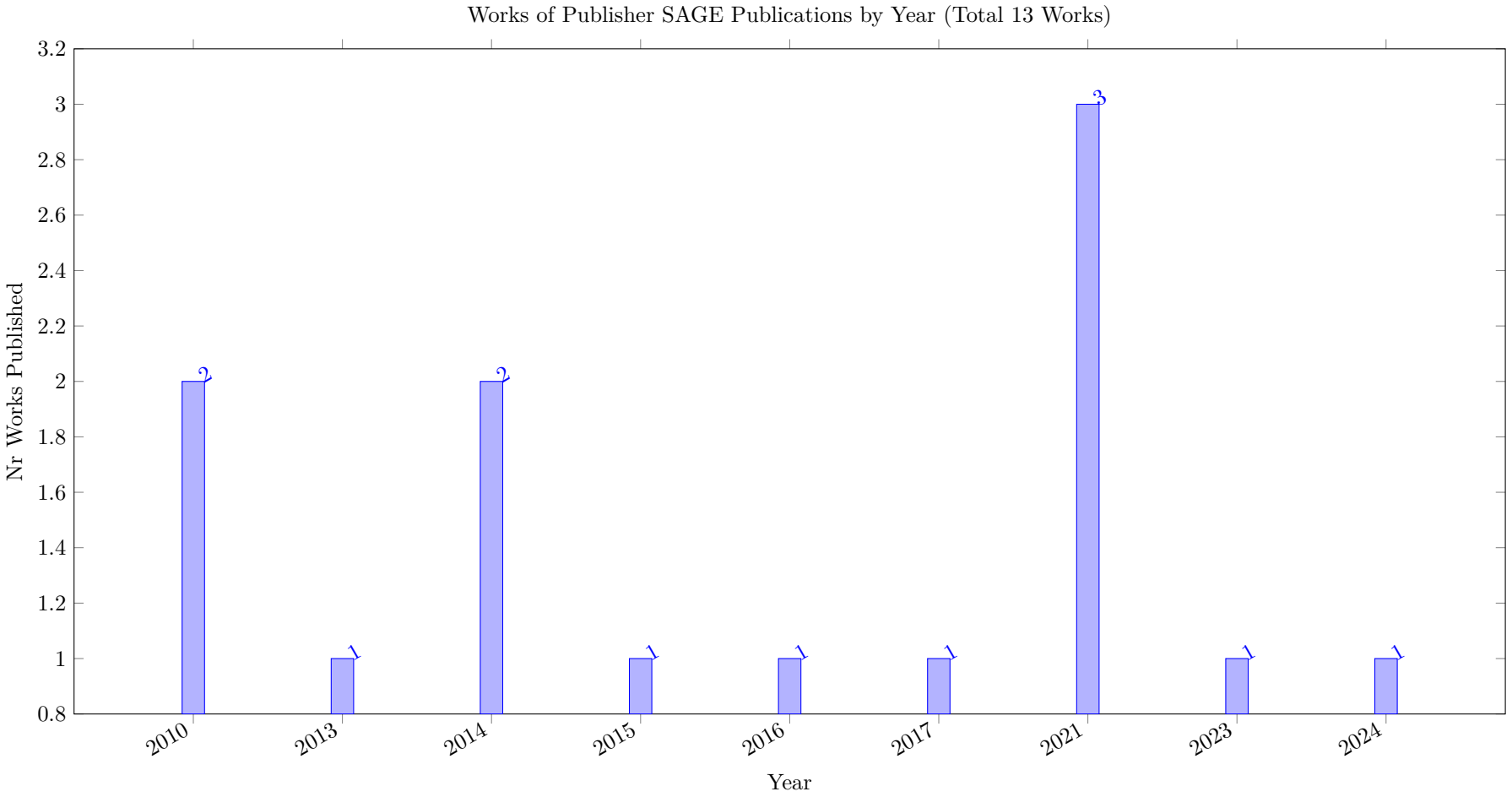
Works of Publisher SAGE Publications by Year (Total 13 Works)
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2.6
2.4
2.2
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1.6
1.4
1.2
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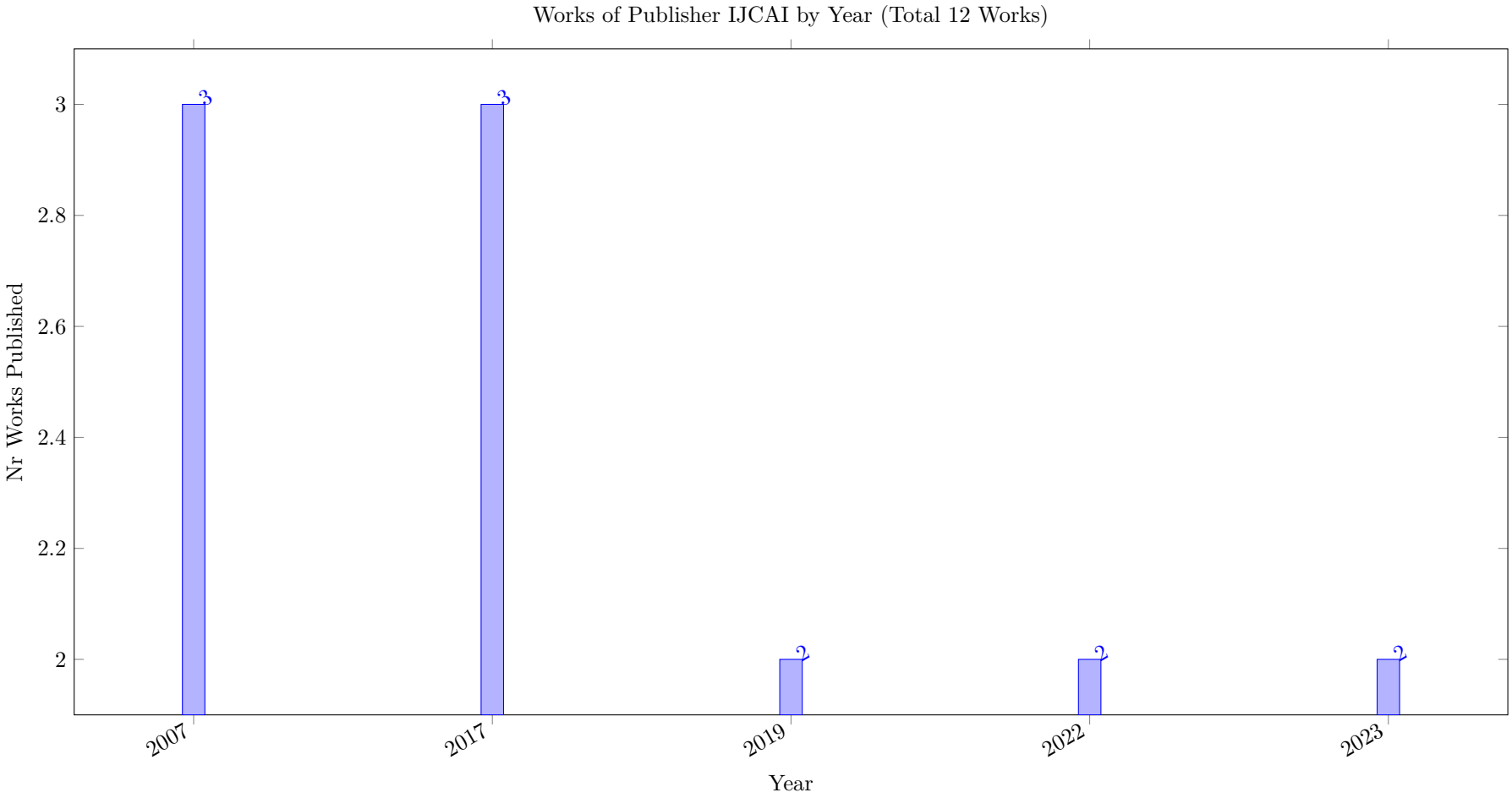
Year


Works of Publisher IJCAI by Year (Total 12 Works)
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2.4
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2
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2
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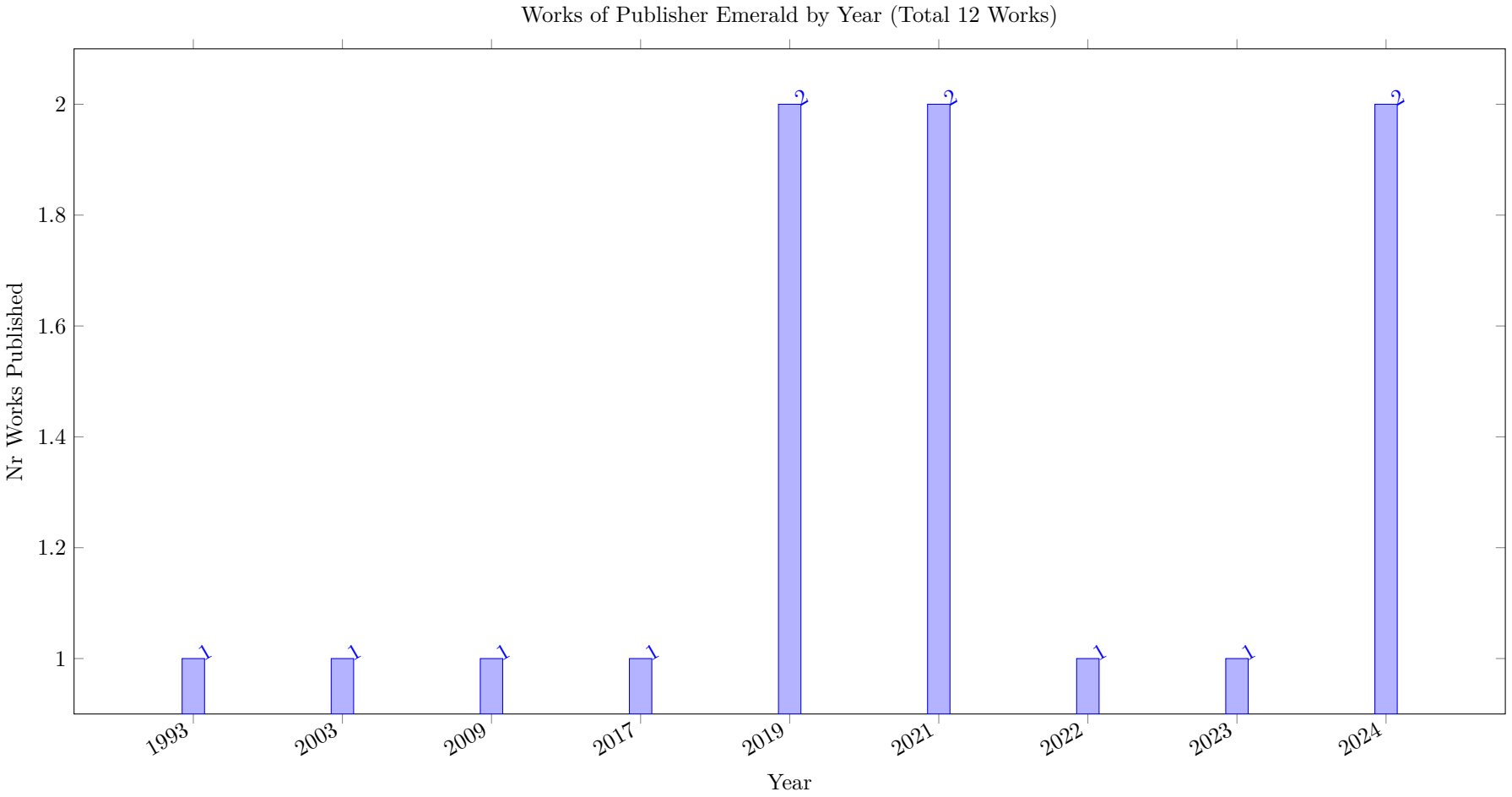
2019
2022
2023
Year


Works of Publisher Emerald by Year (Total 12 Works)
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1.2
1.4
1.6
1.8
2
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2
1993
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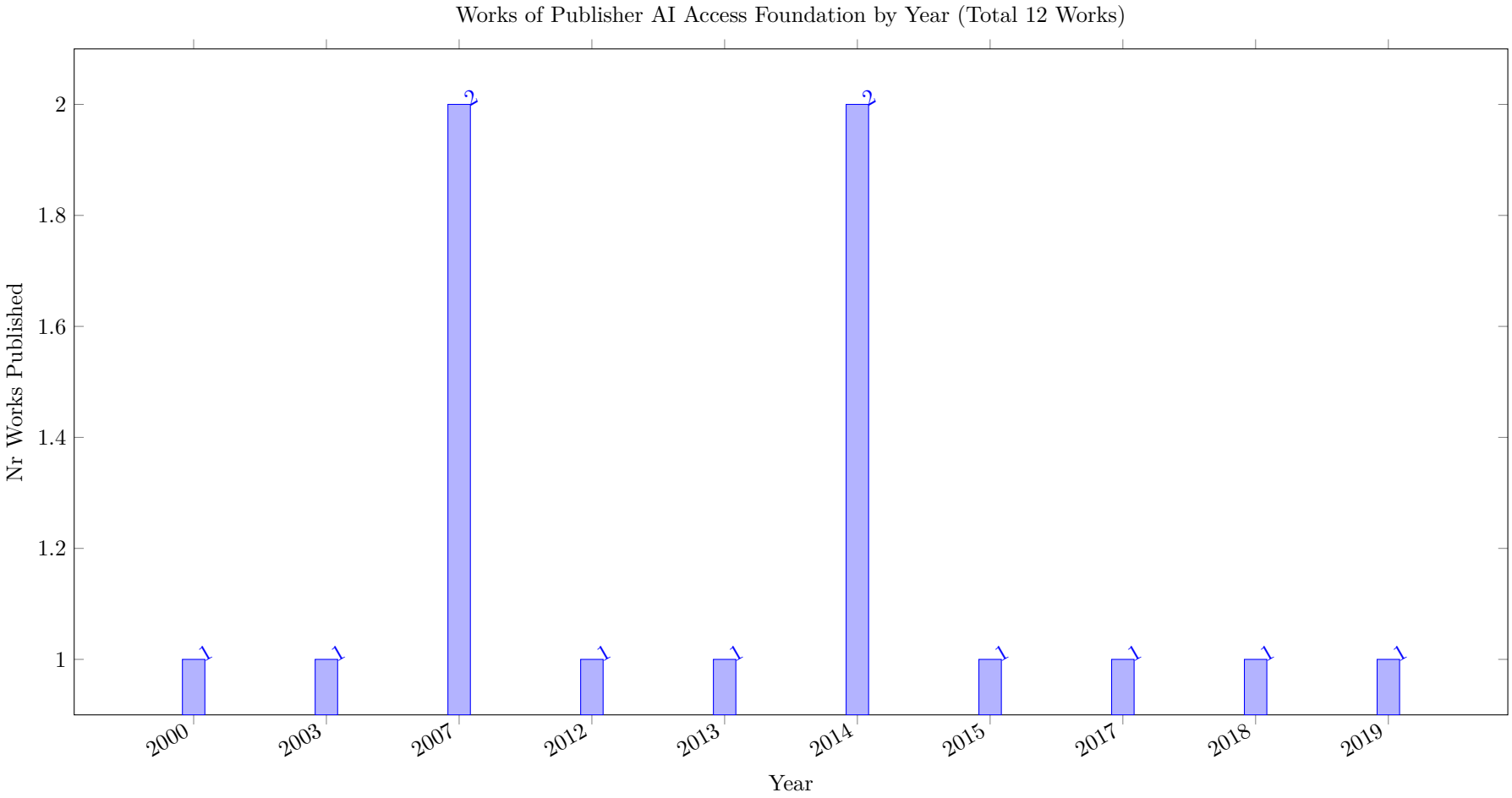
2009
2017
2019
2021
2022
2023
2024
Year


Works of Publisher AI Access Foundation by Year (Total 12 Works)
Nr Works Published
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1.4
1.2
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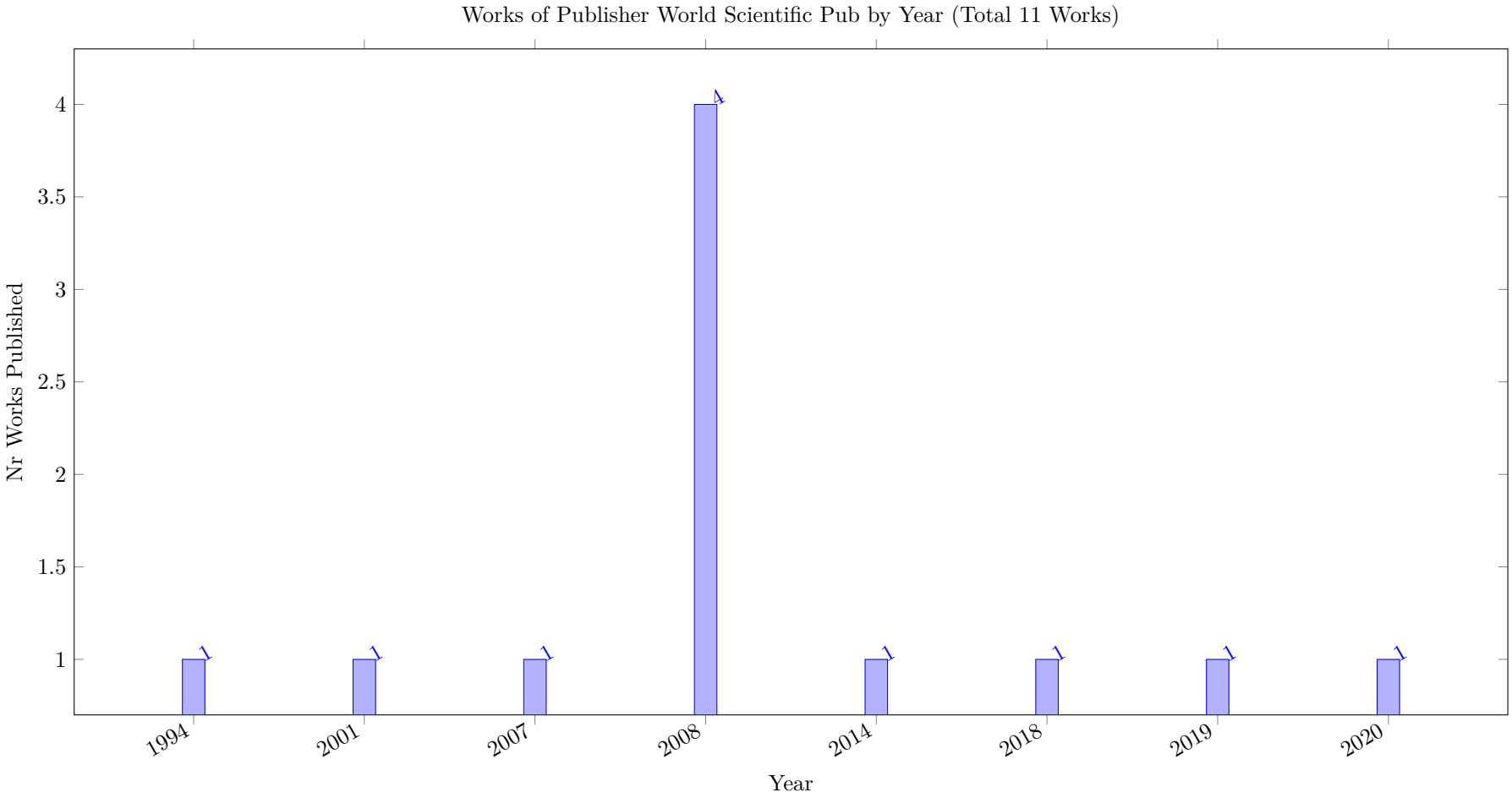
2007
2012
2013
2014
2015
2017
2018
2019
Year


Works of Publisher World Scientific Pub by Year (Total 11 Works)
Nr Works Published
4
3.5
3
2.5
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1
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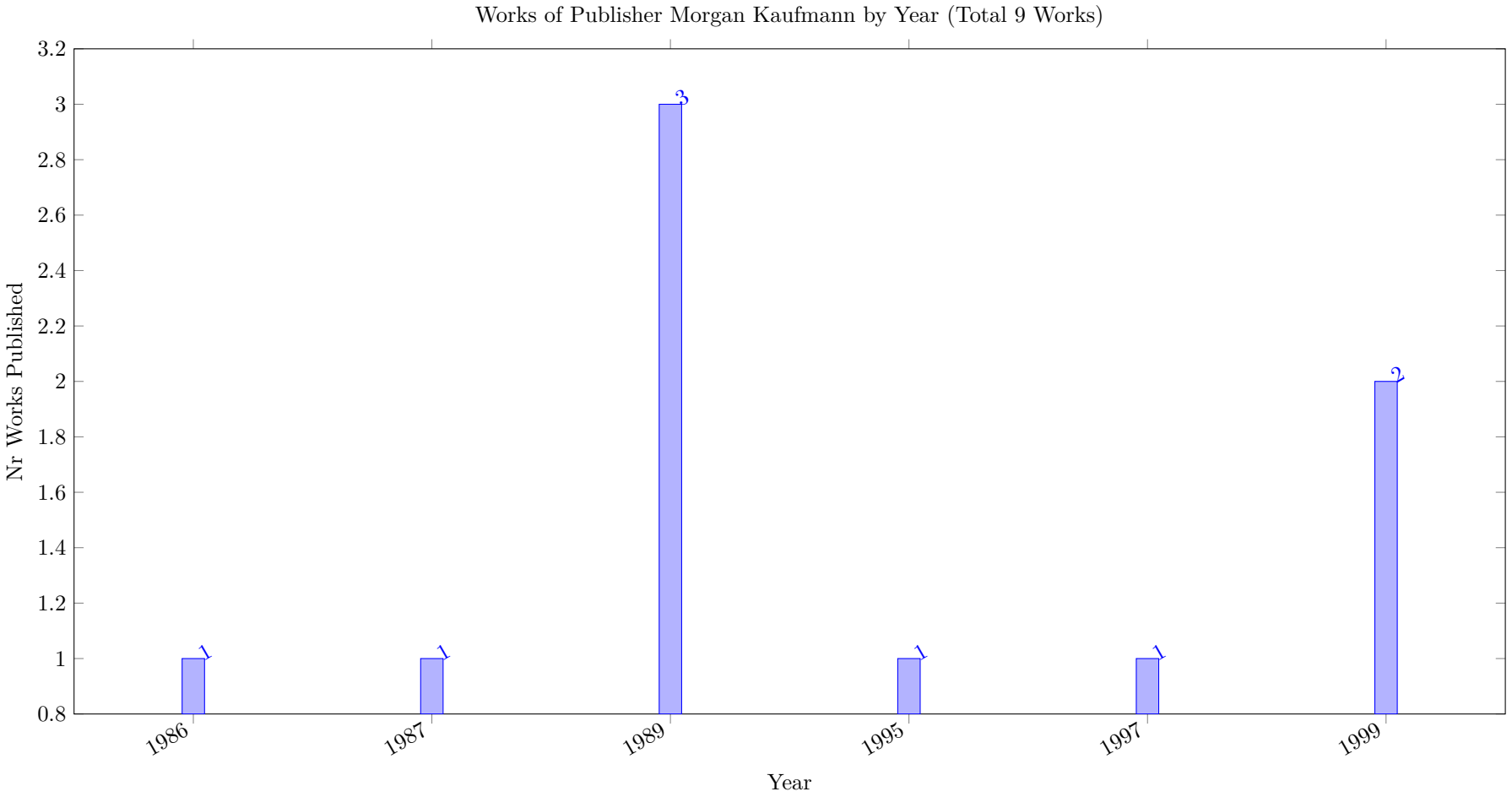
1994
2001
2007
2008
2014
2018
2019
2020
Year


Works of Publisher Morgan Kaufmann by Year (Total 9 Works)
Nr Works Published
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2.6
2.4
2.2
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1.8
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2
1986
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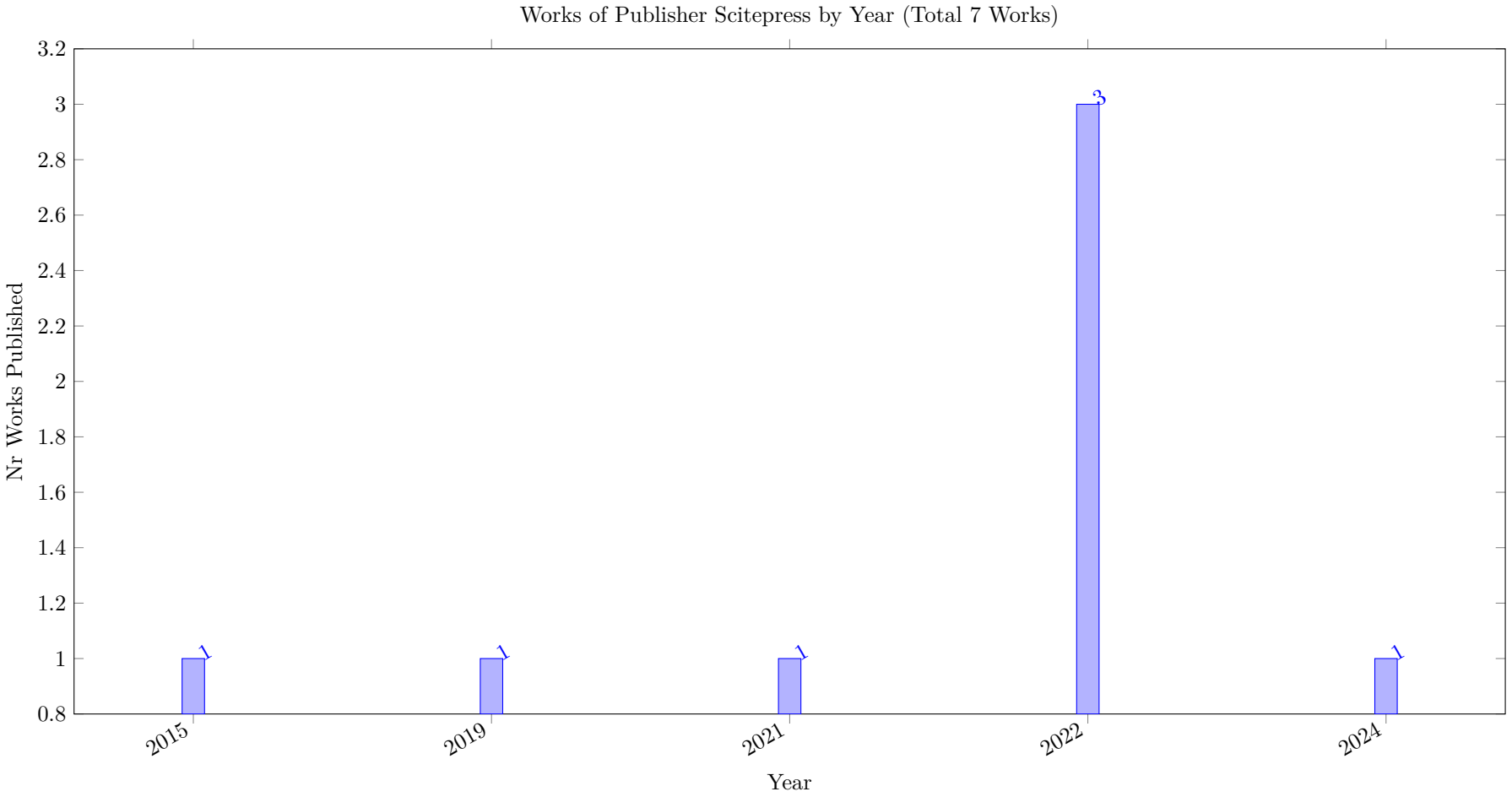
1989
1995
1997
1999
Year


Works of Publisher Scitepress by Year (Total 7 Works)
Nr Works Published
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3
2.8
2.6
2.4
2.2
2
1.8
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1
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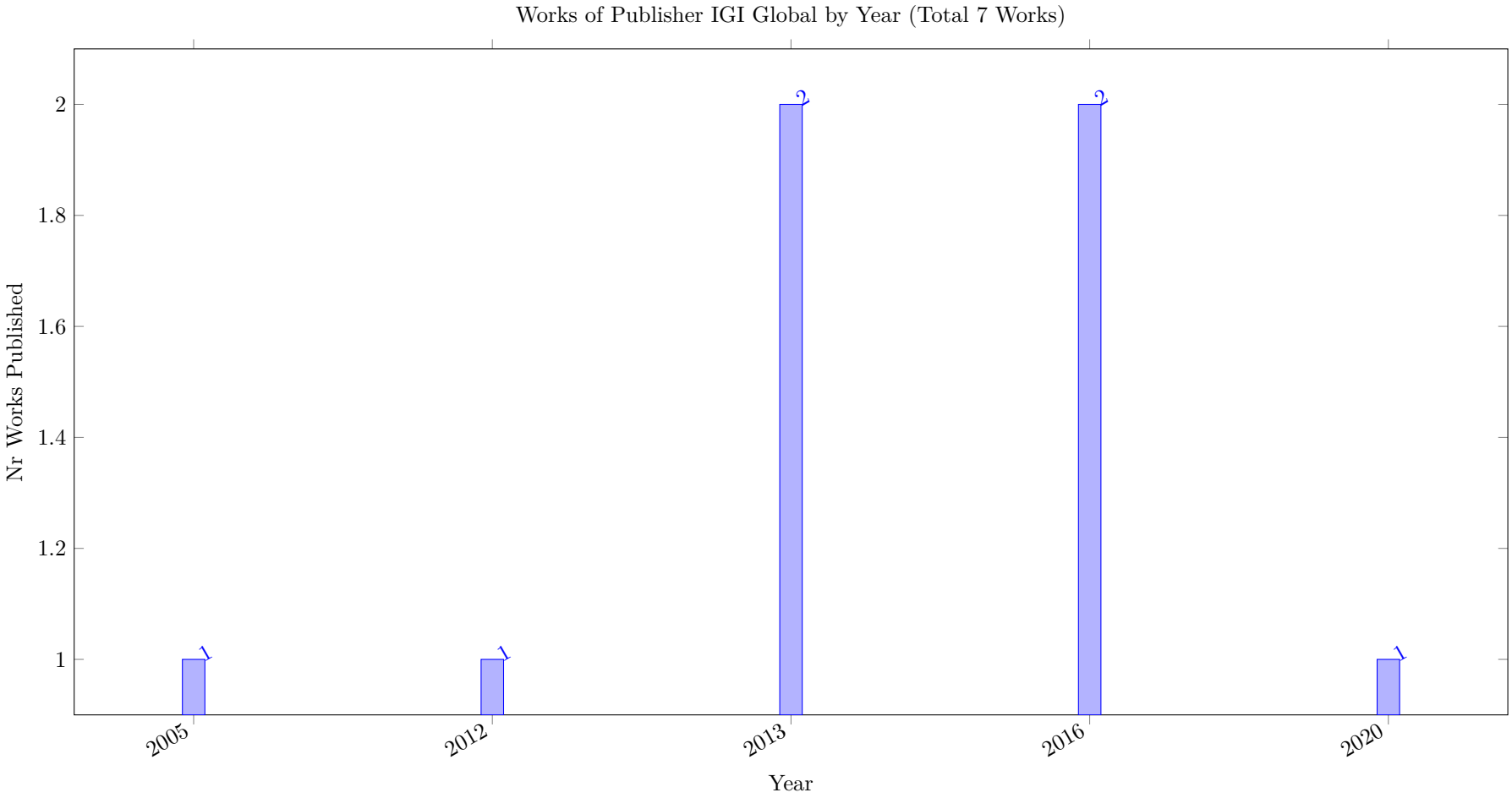
2019
2021
2022
2024
Year


Works of Publisher IGI Global by Year (Total 7 Works)
Nr Works Published
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1.4
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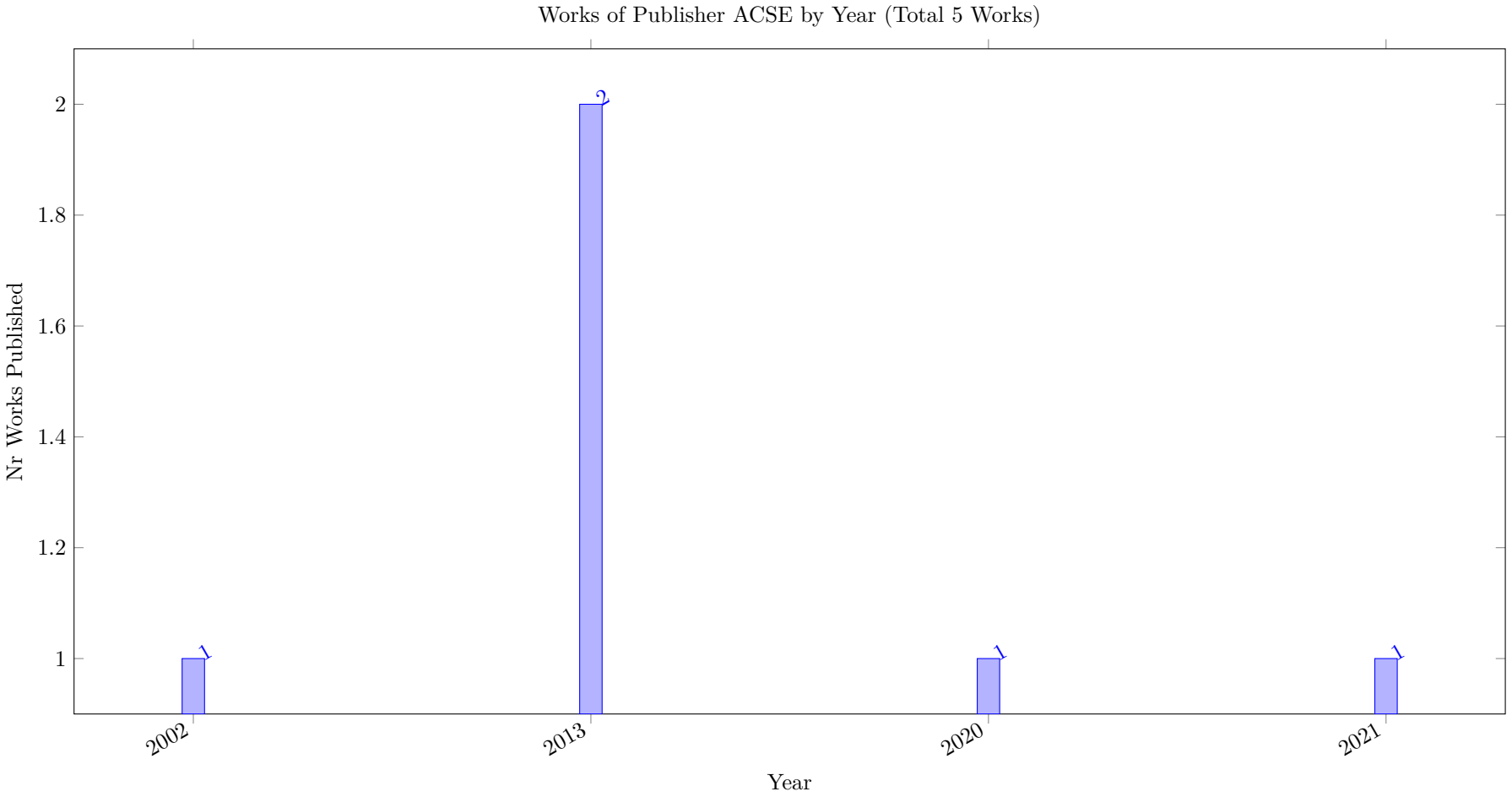
1
2005
2012
2013
2016
2020
Year


Works of Publisher ACSE by Year (Total 5 Works)
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1.4
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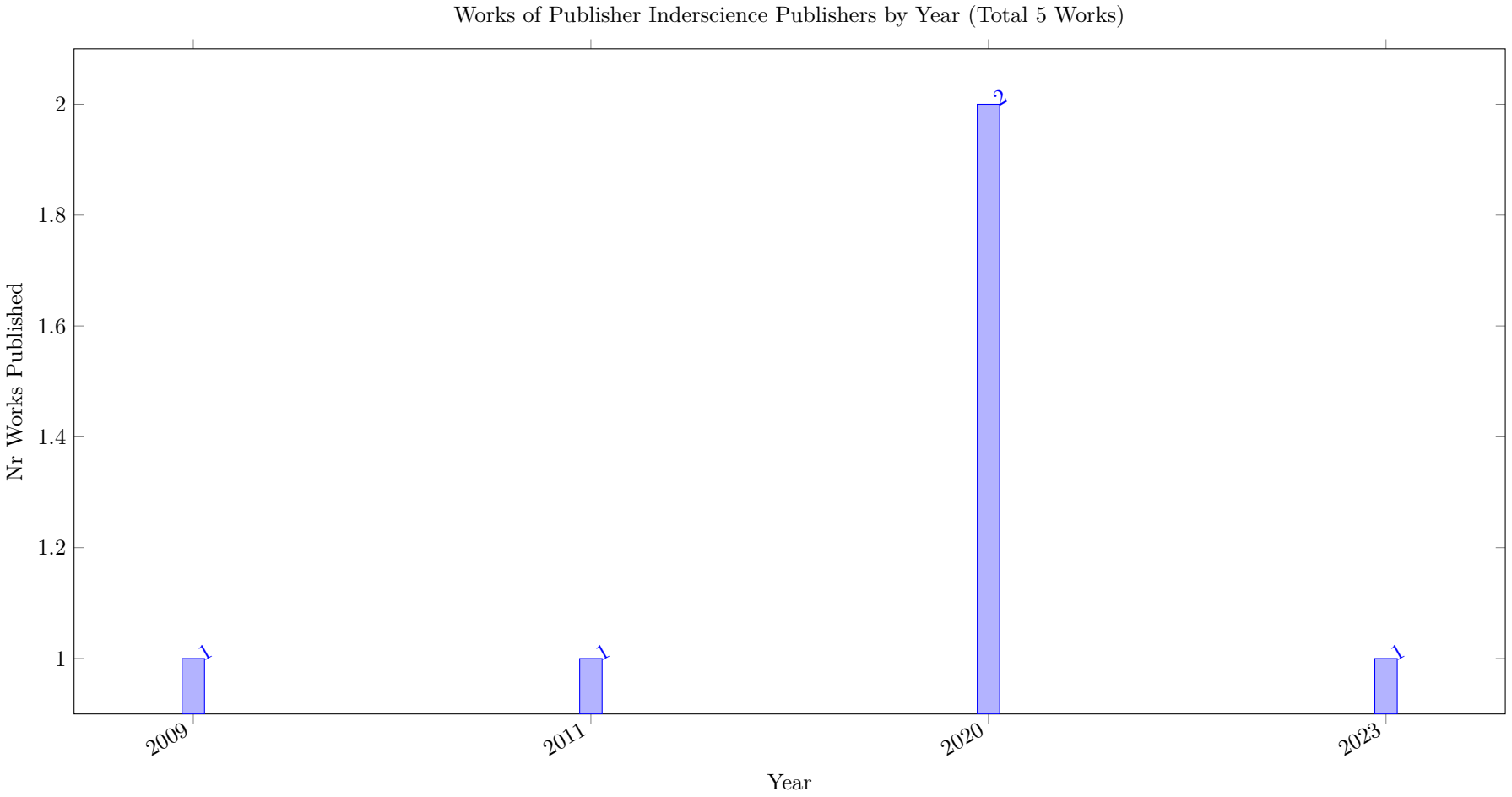
1
1
2002
2013
2020
2021
Year


Works of Publisher Inderscience Publishers by Year (Total 5 Works)
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2
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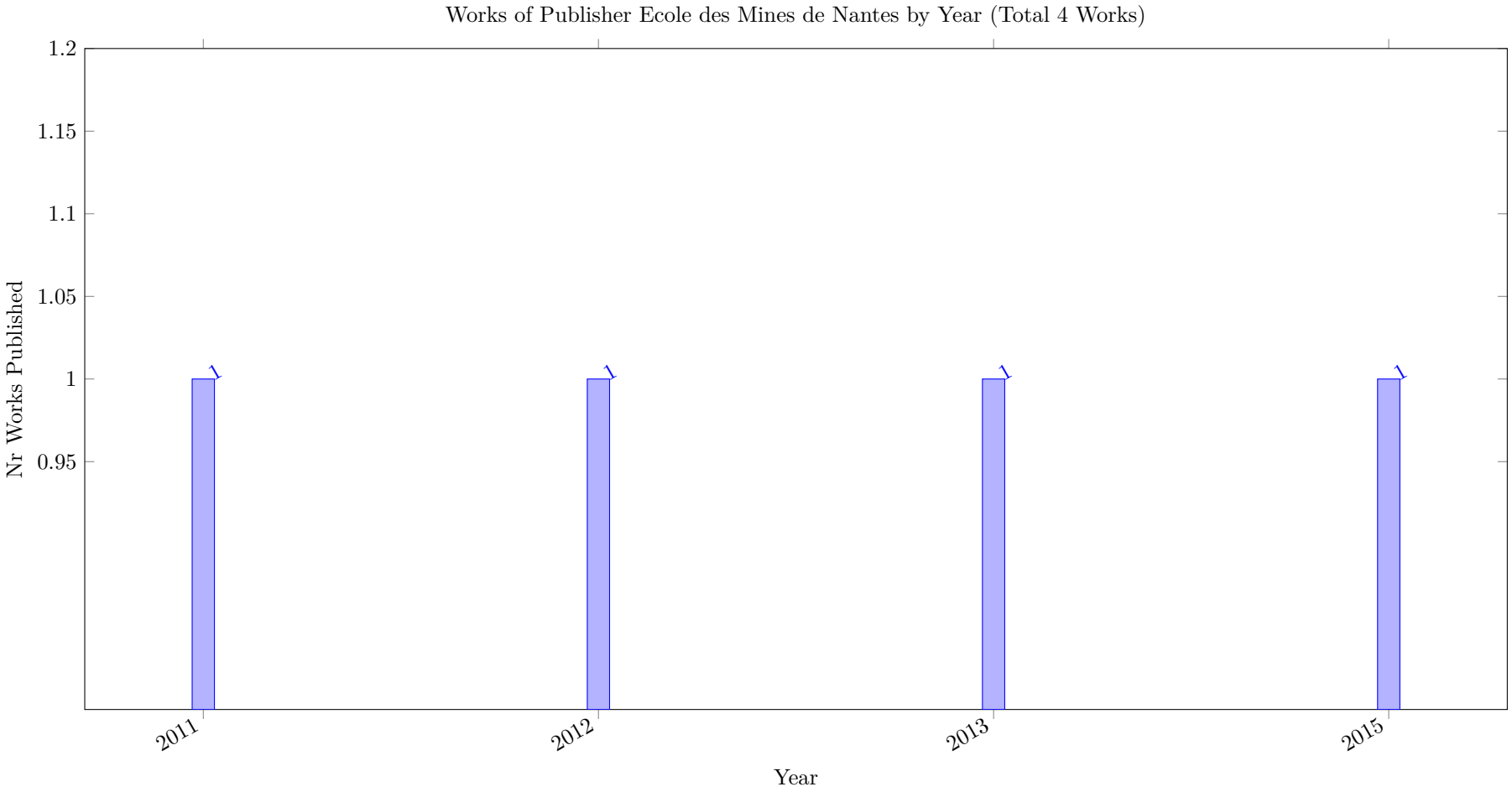
2009
2011
2020
2023
Year


Works of Publisher Ecole des Mines de Nantes by Year (Total 4 Works)
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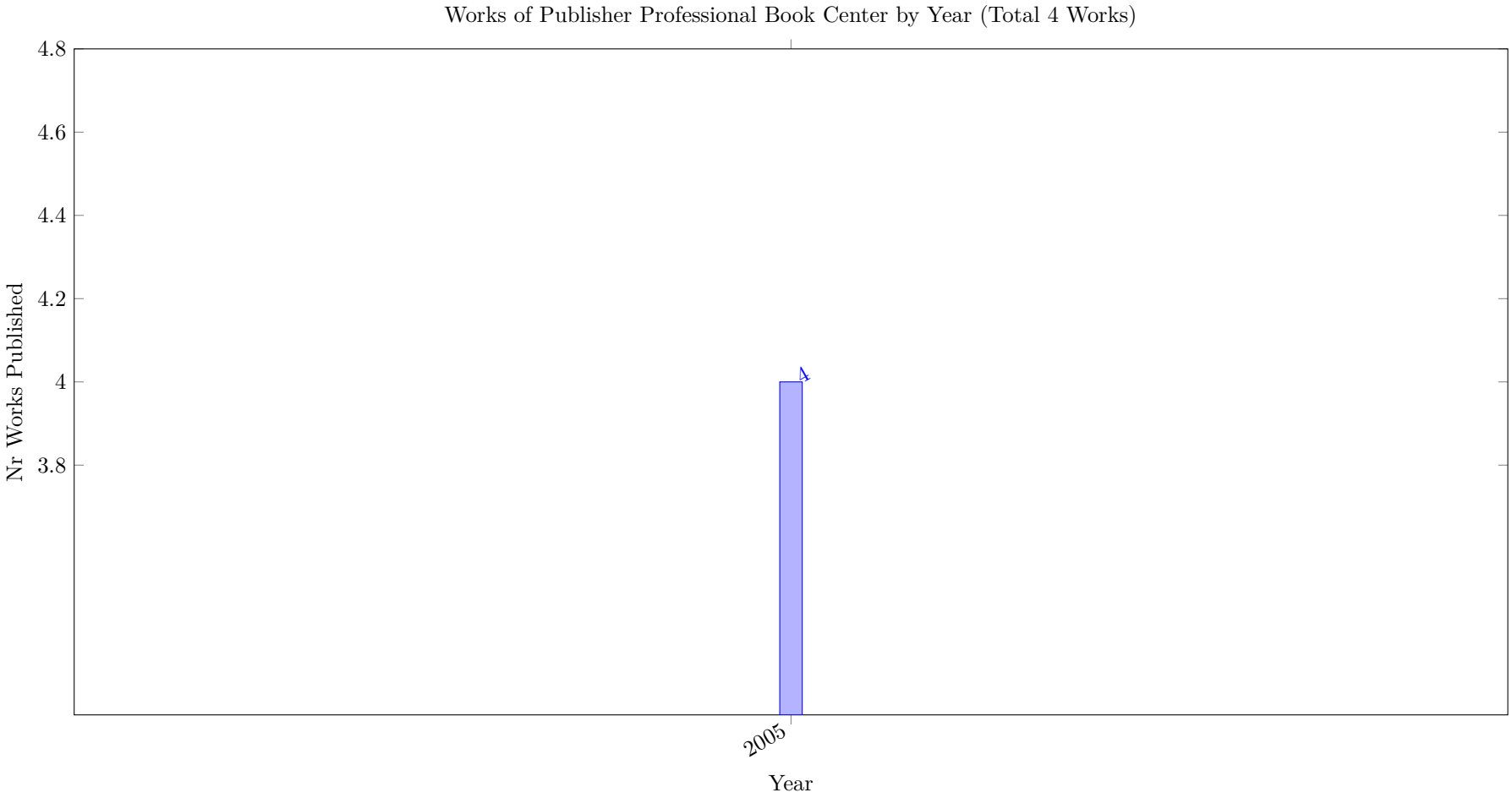
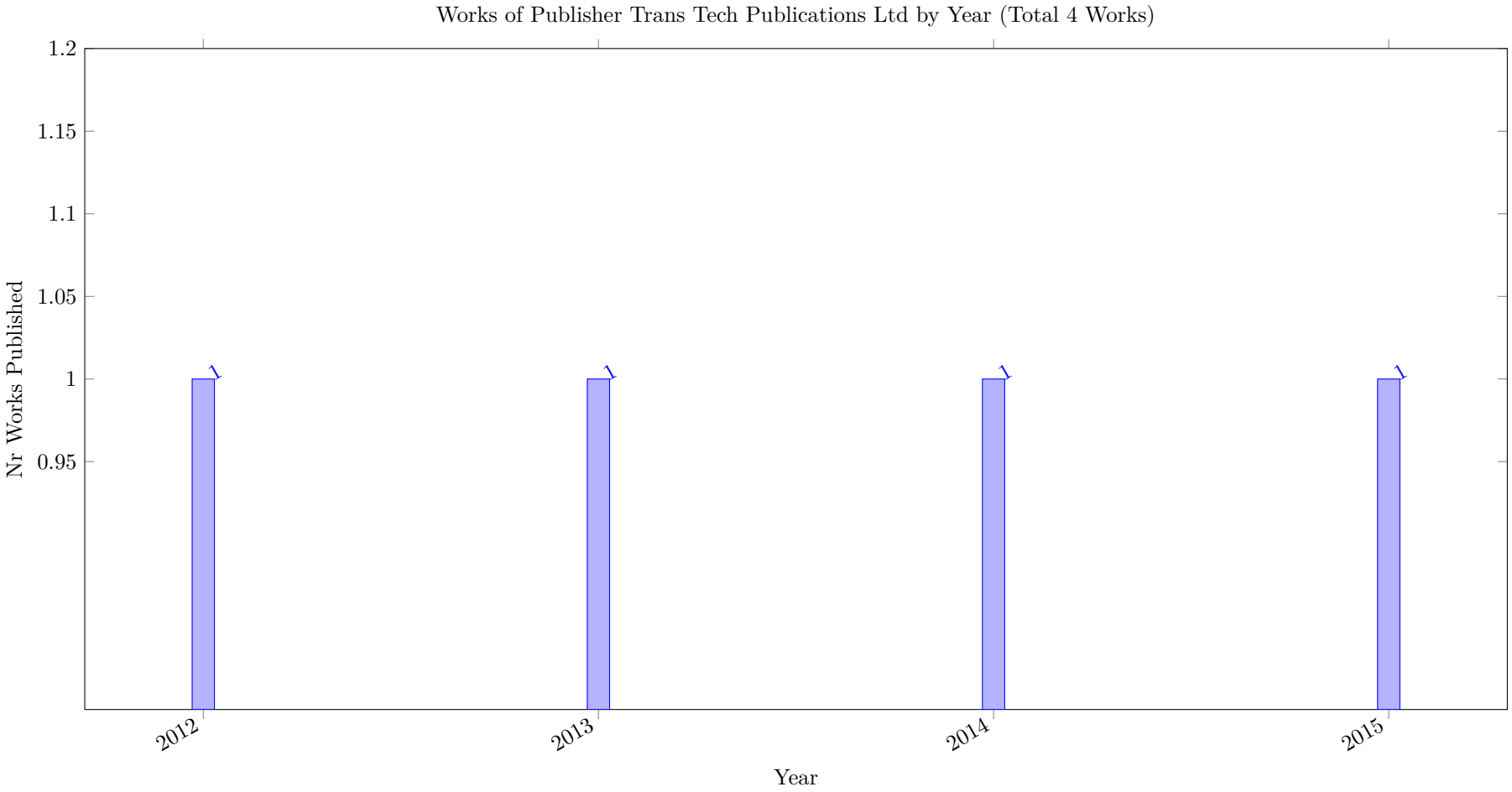
2013
2015
Year


Works of Publisher Professional Book Center by Year (Total 4 Works)
Nr Works Published
4.8
4.6
4.4
4.2
4
3.8
4
2005
Year


Works of Publisher Trans Tech Publications Ltd by Year (Total 4 Works)
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1.1
1.05
1
0.95
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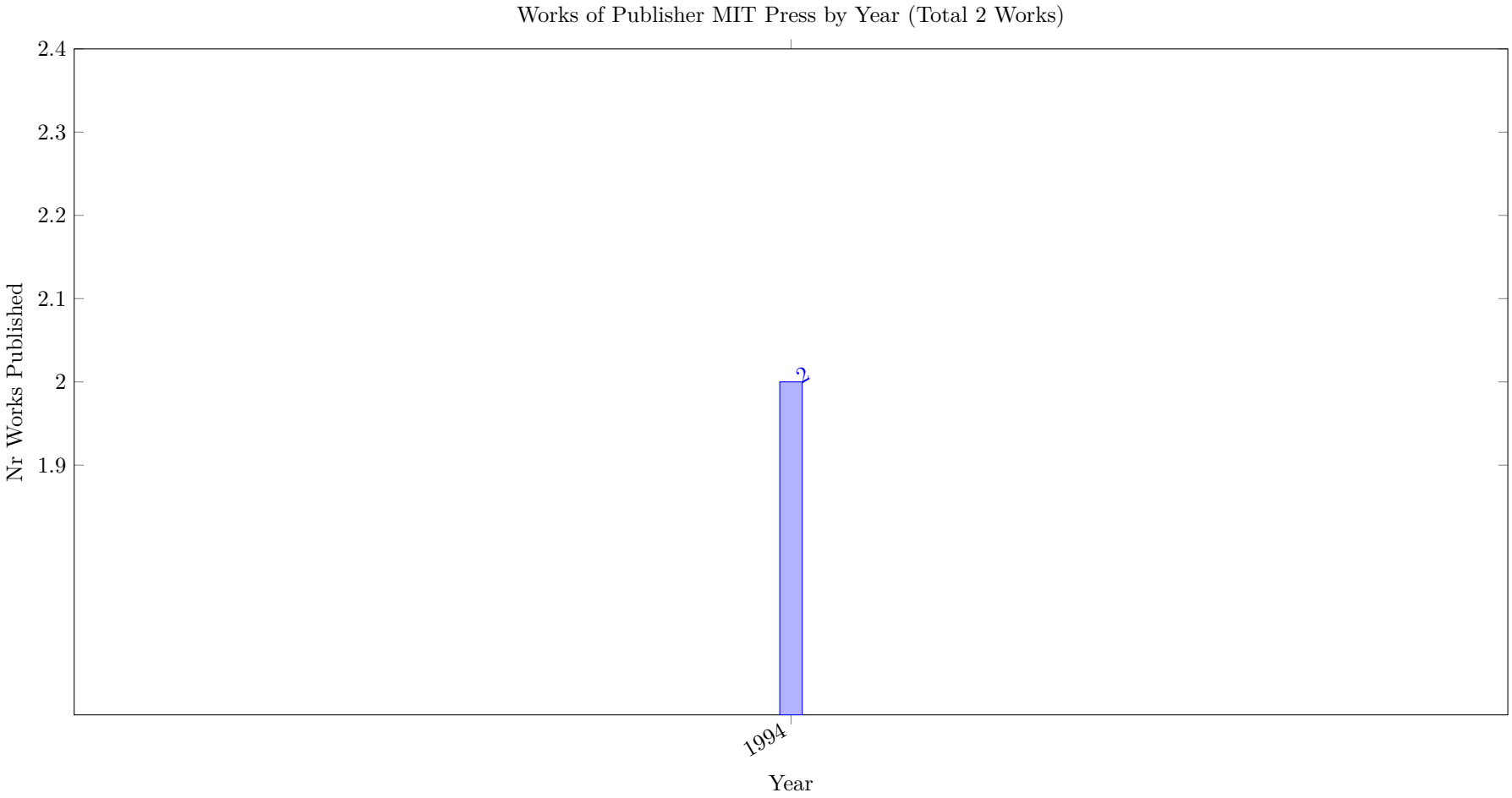
1
1
1
2012
2013
2014
2015
Year


Works of Publisher MIT Press by Year (Total 2 Works)
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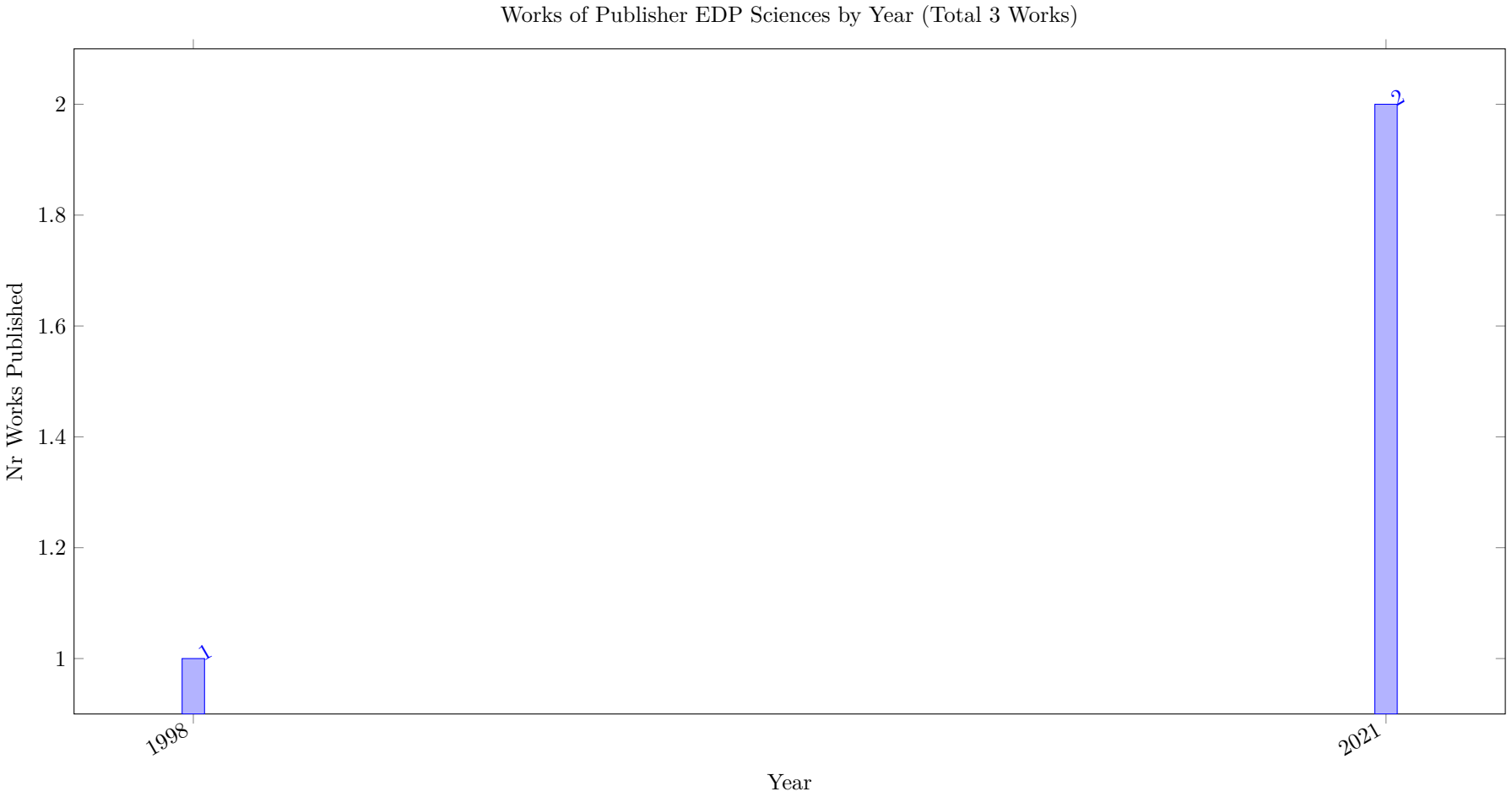
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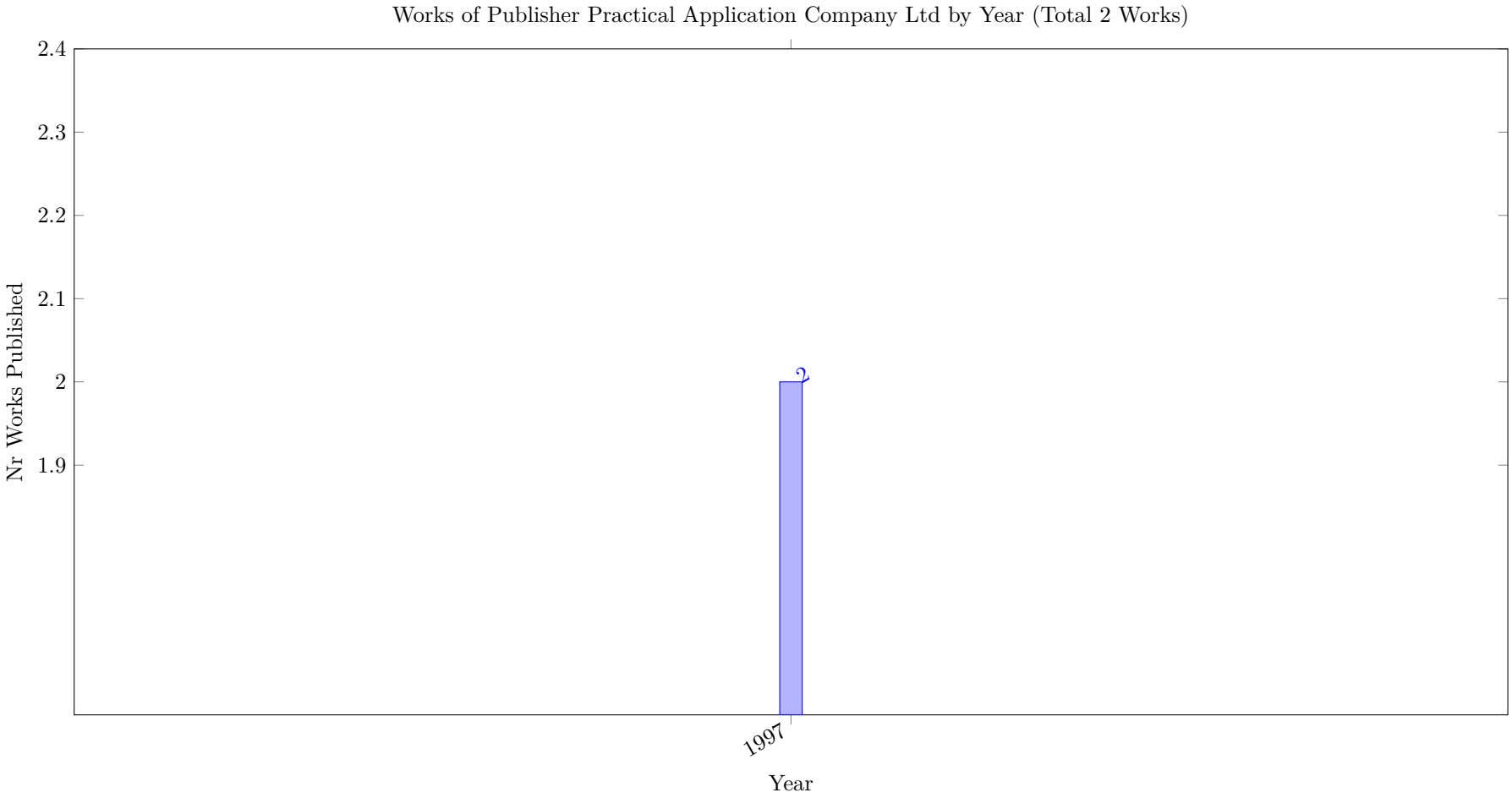
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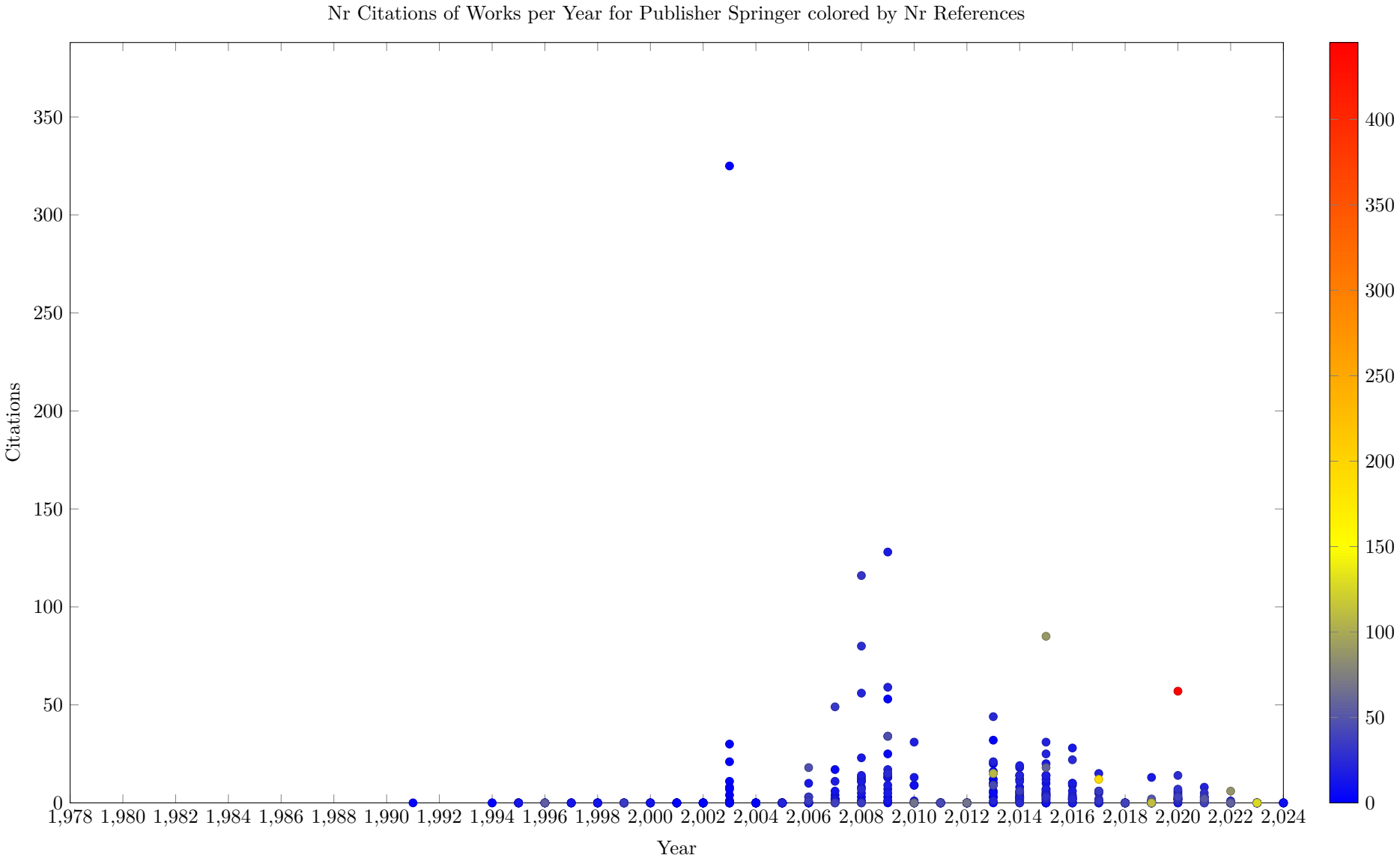
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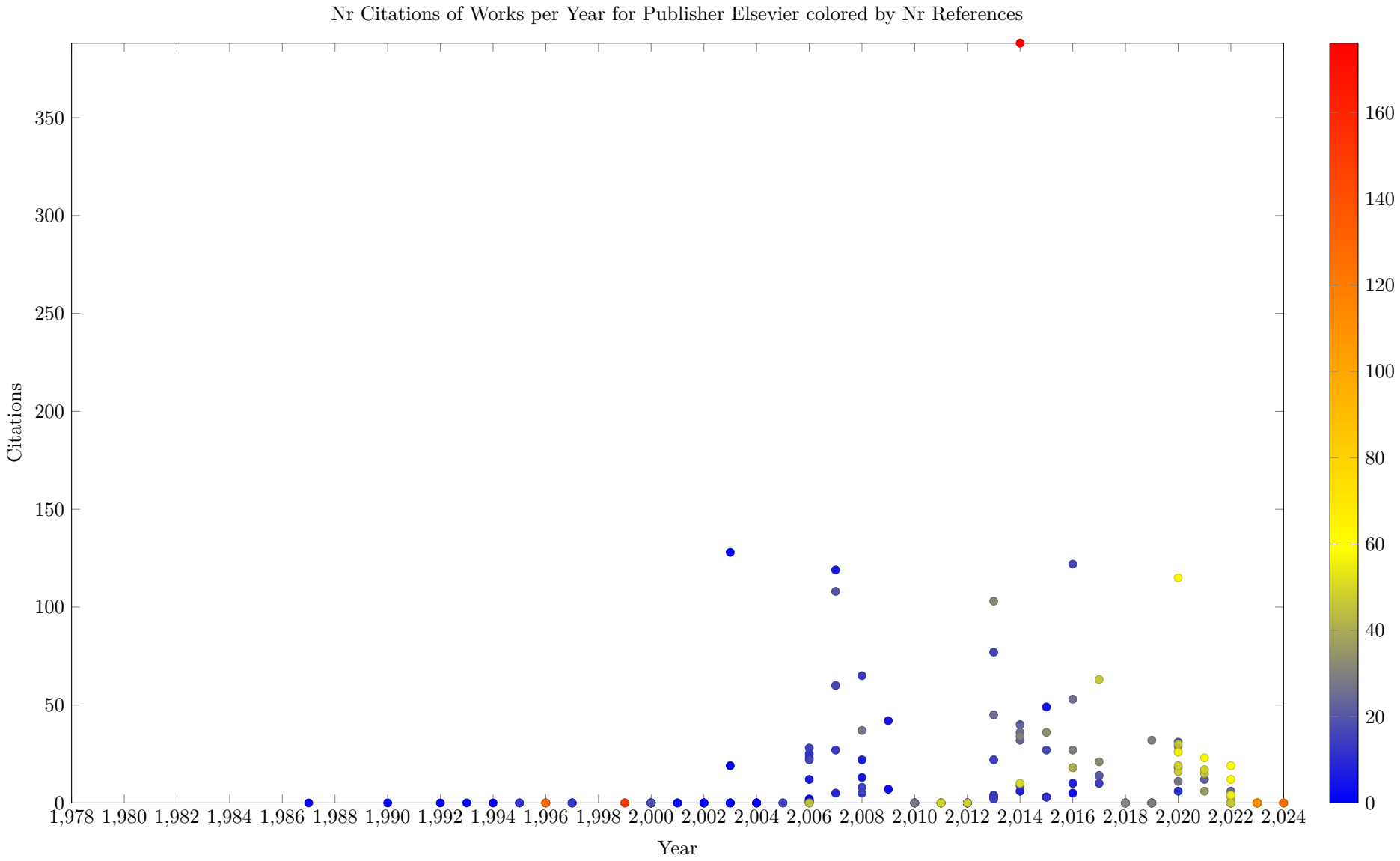
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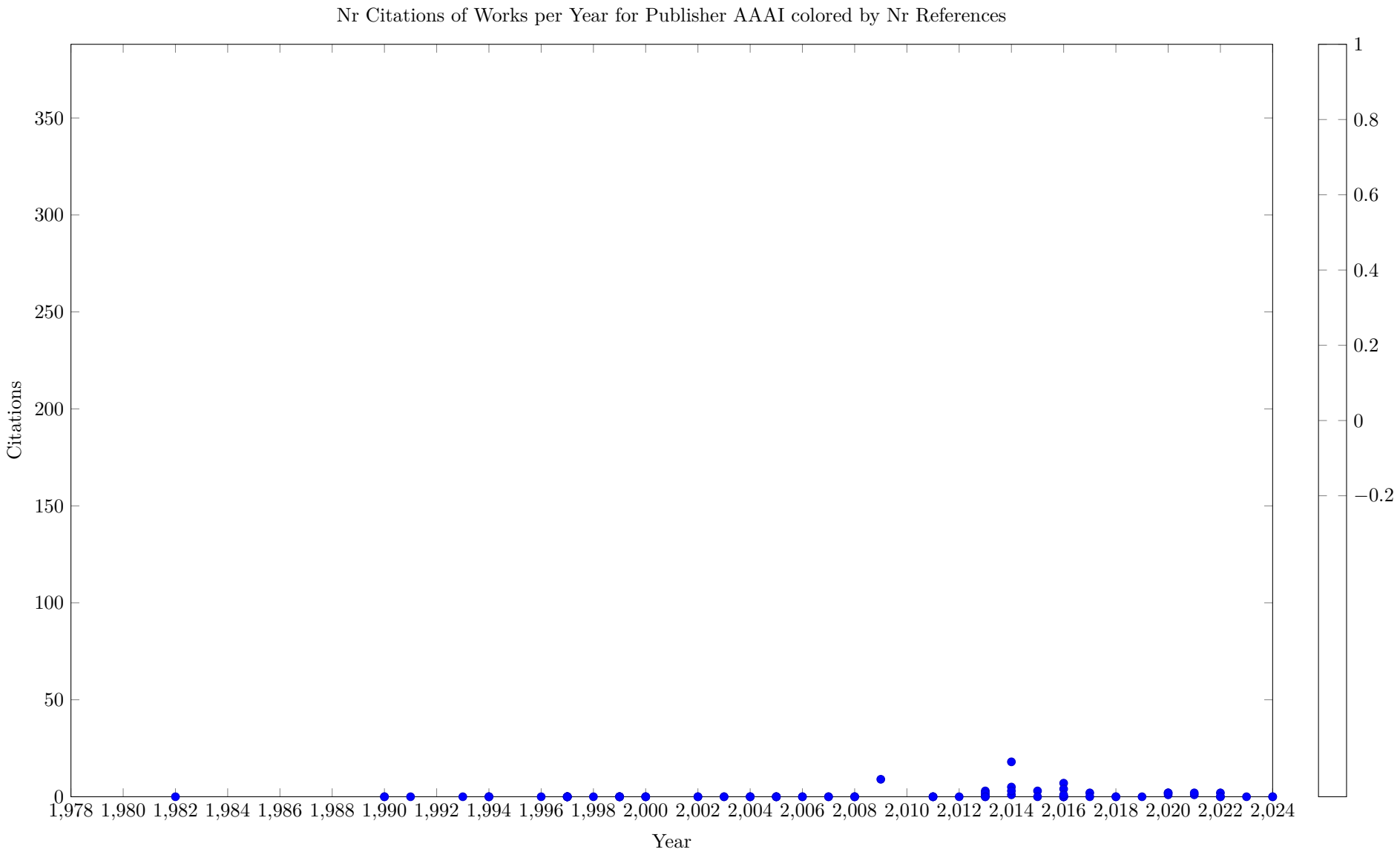
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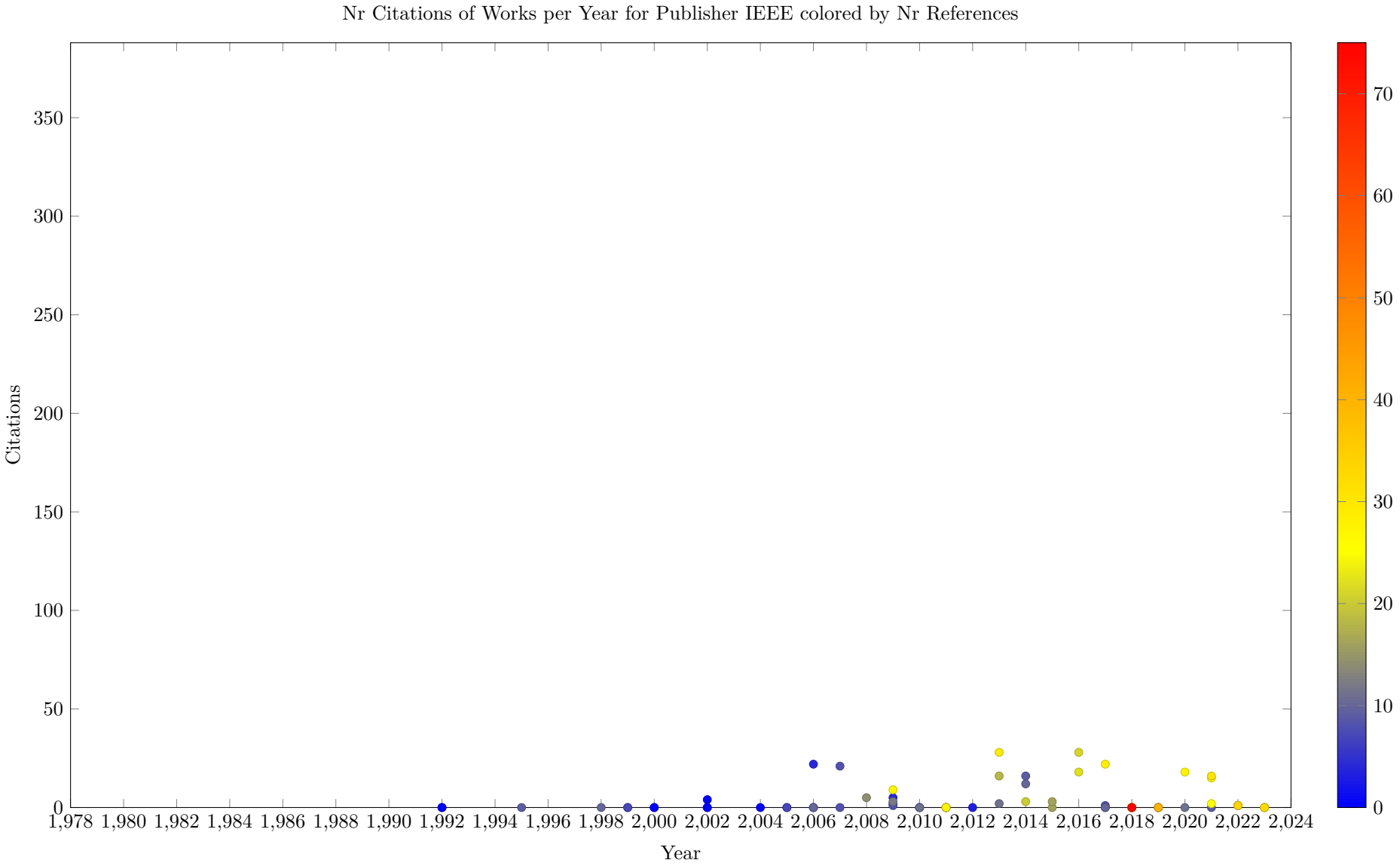
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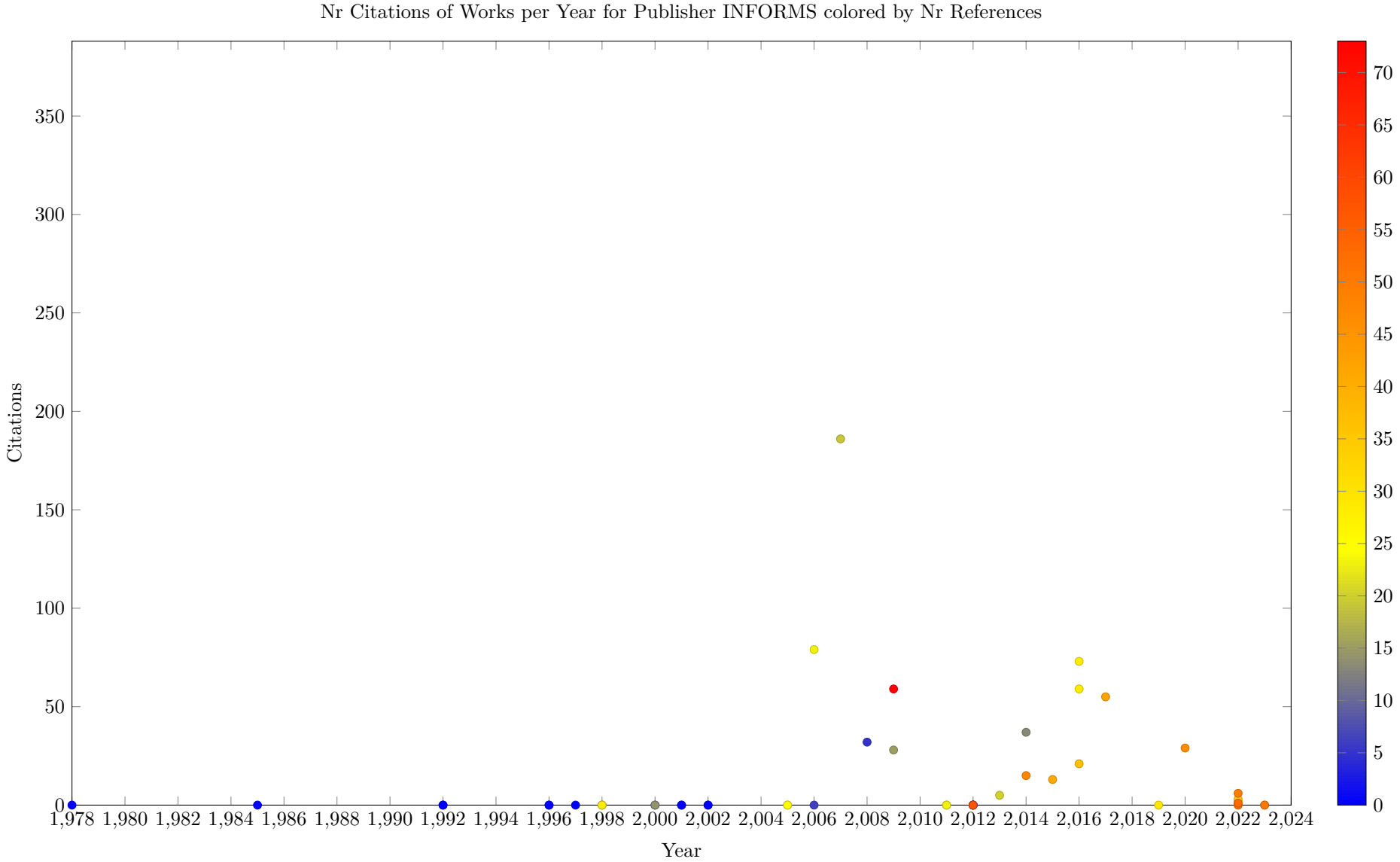
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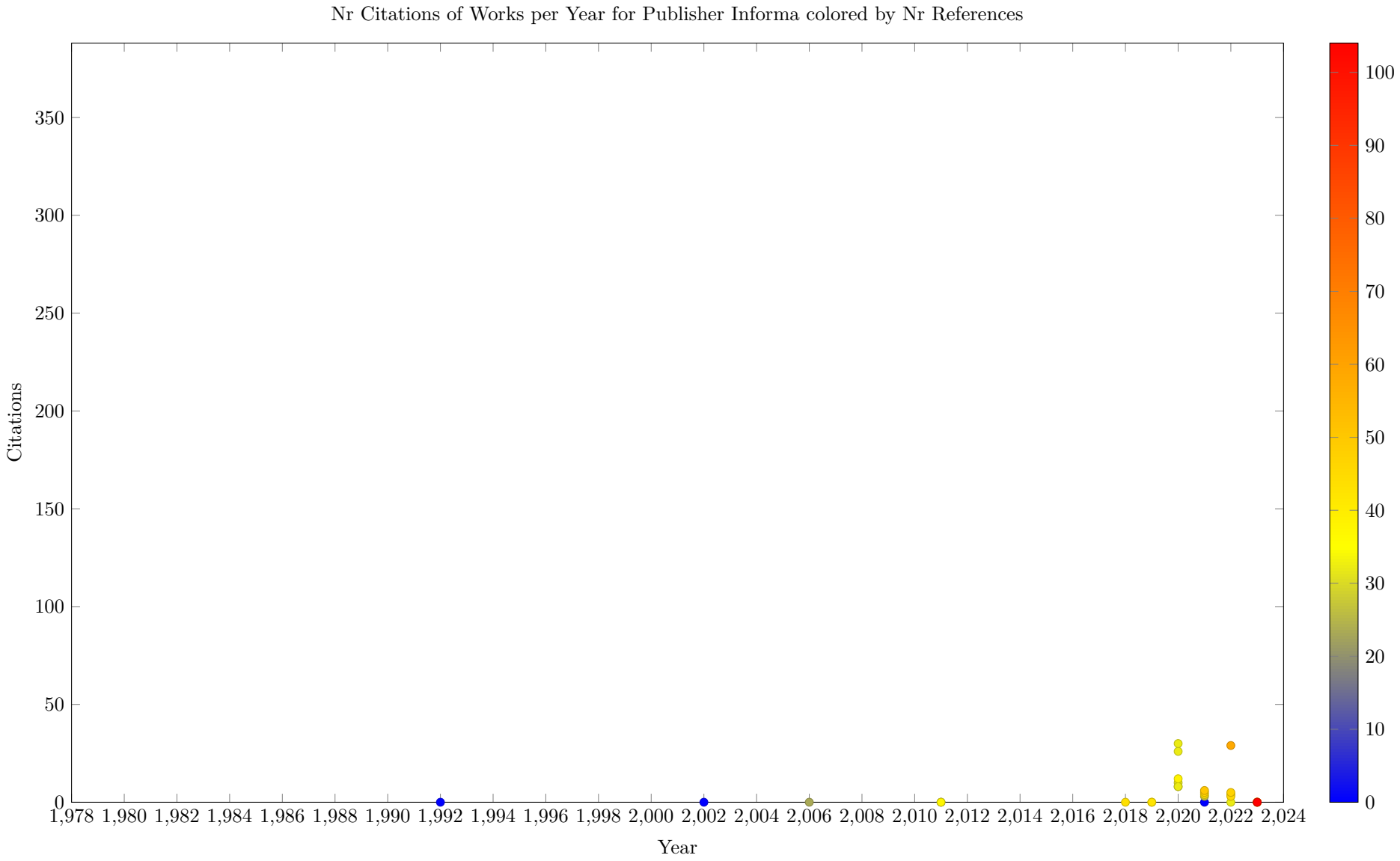
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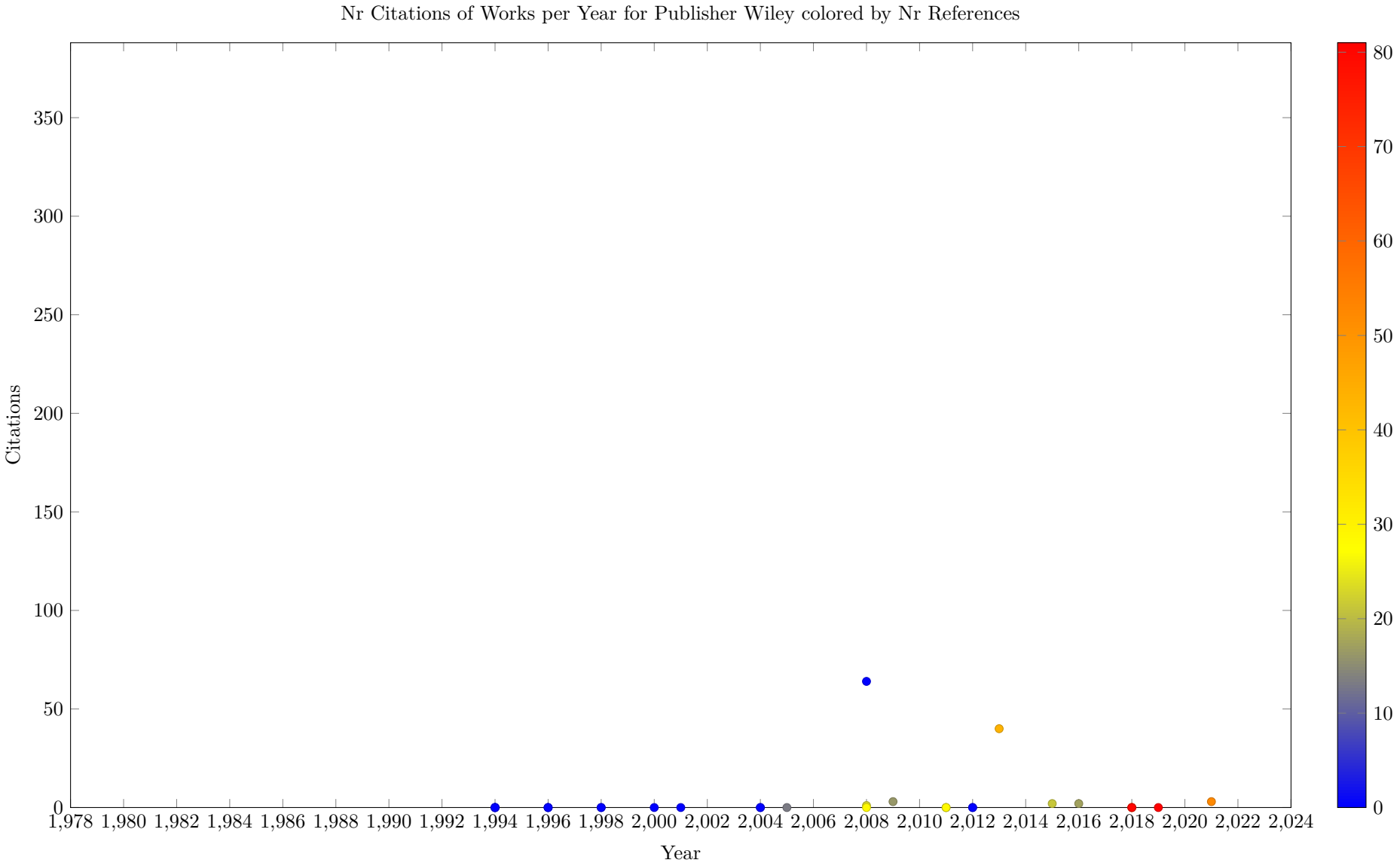
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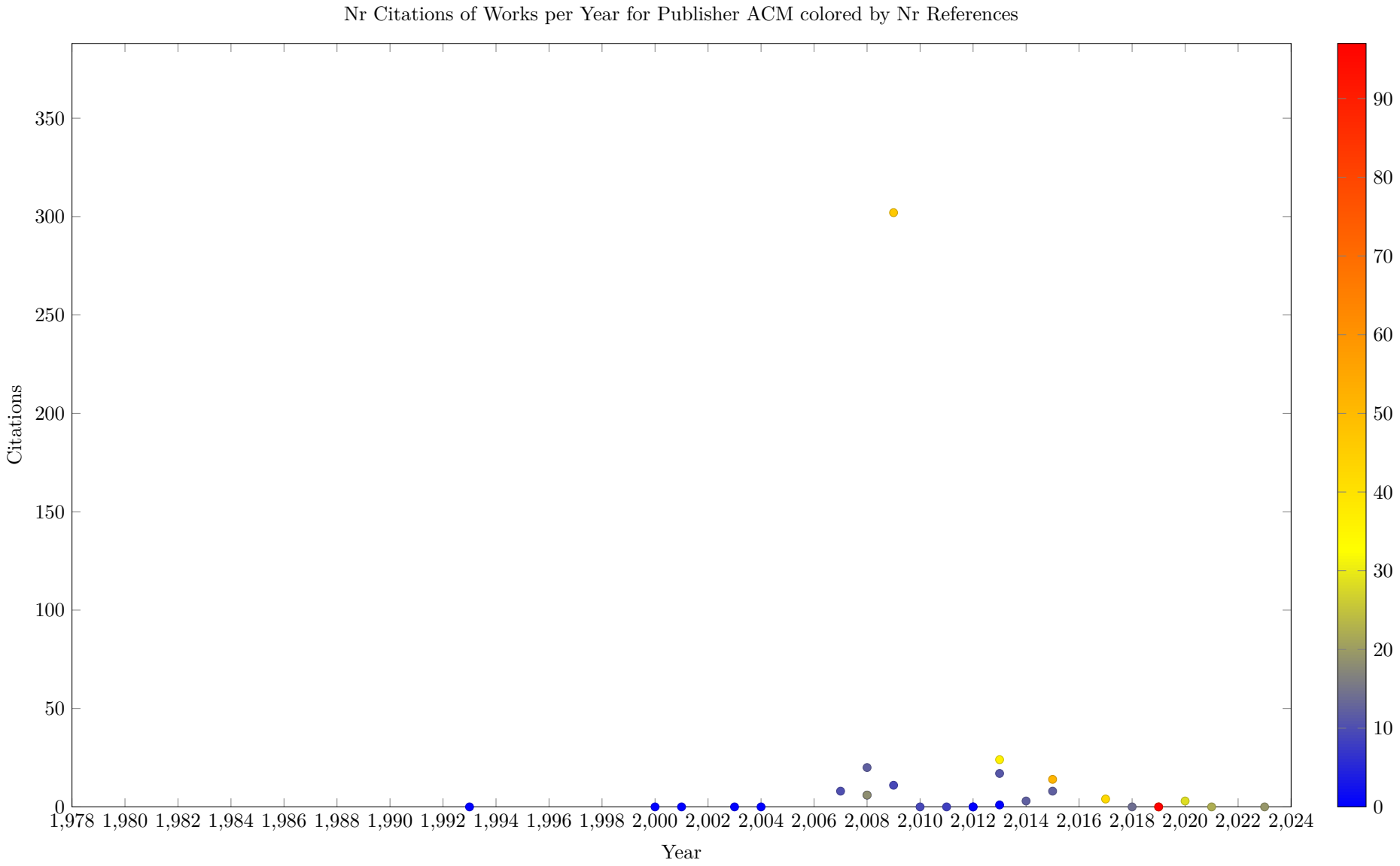
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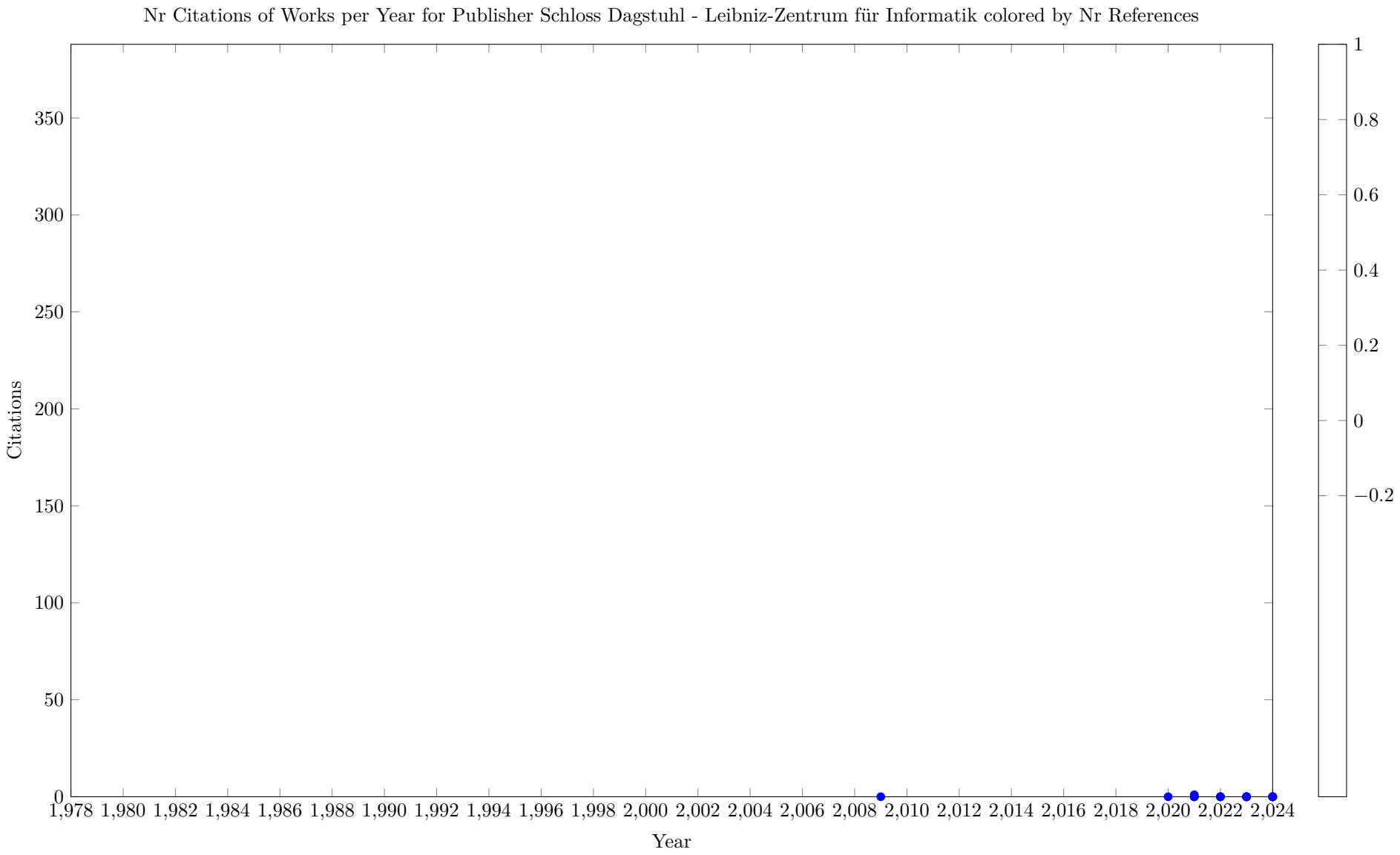
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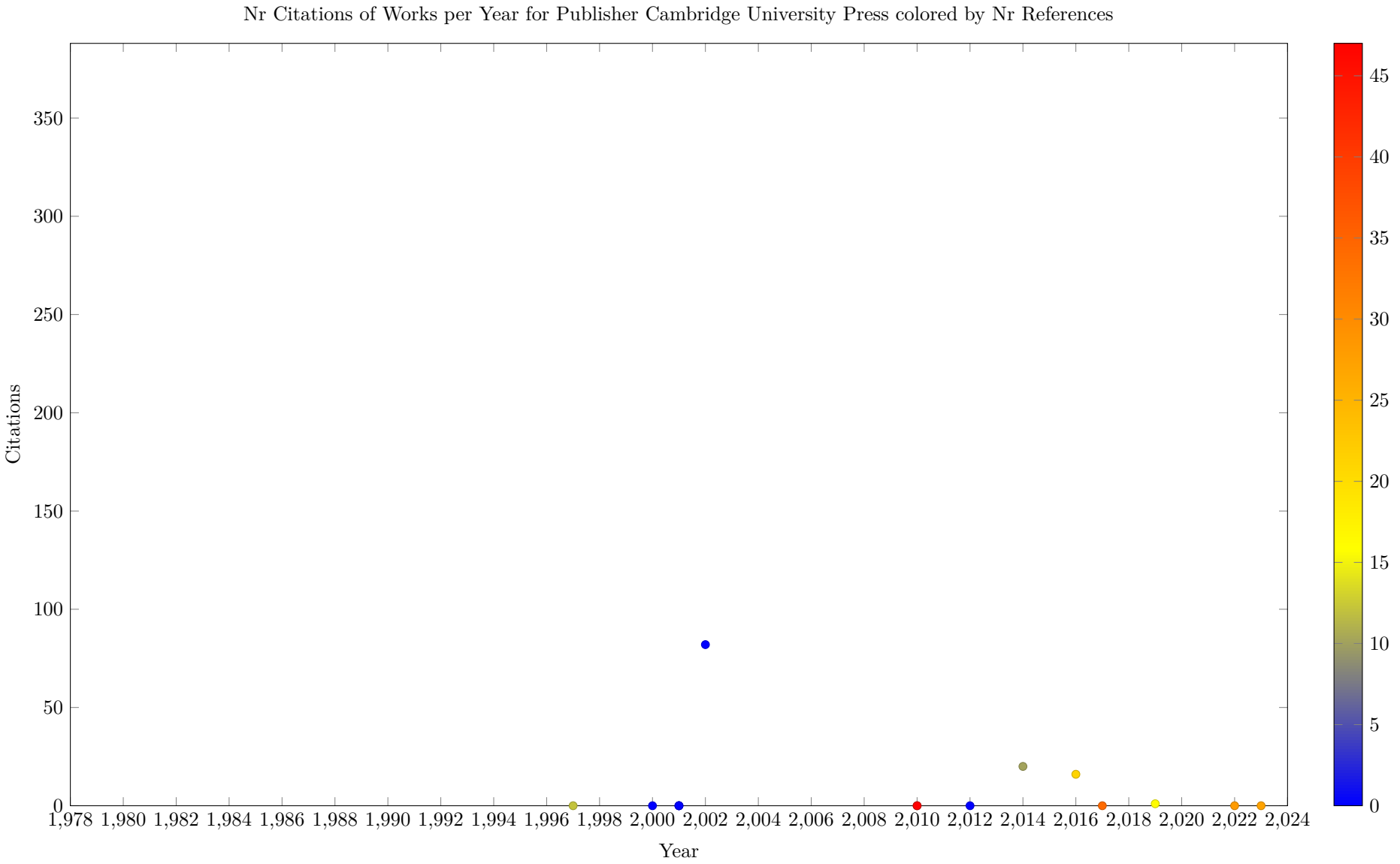
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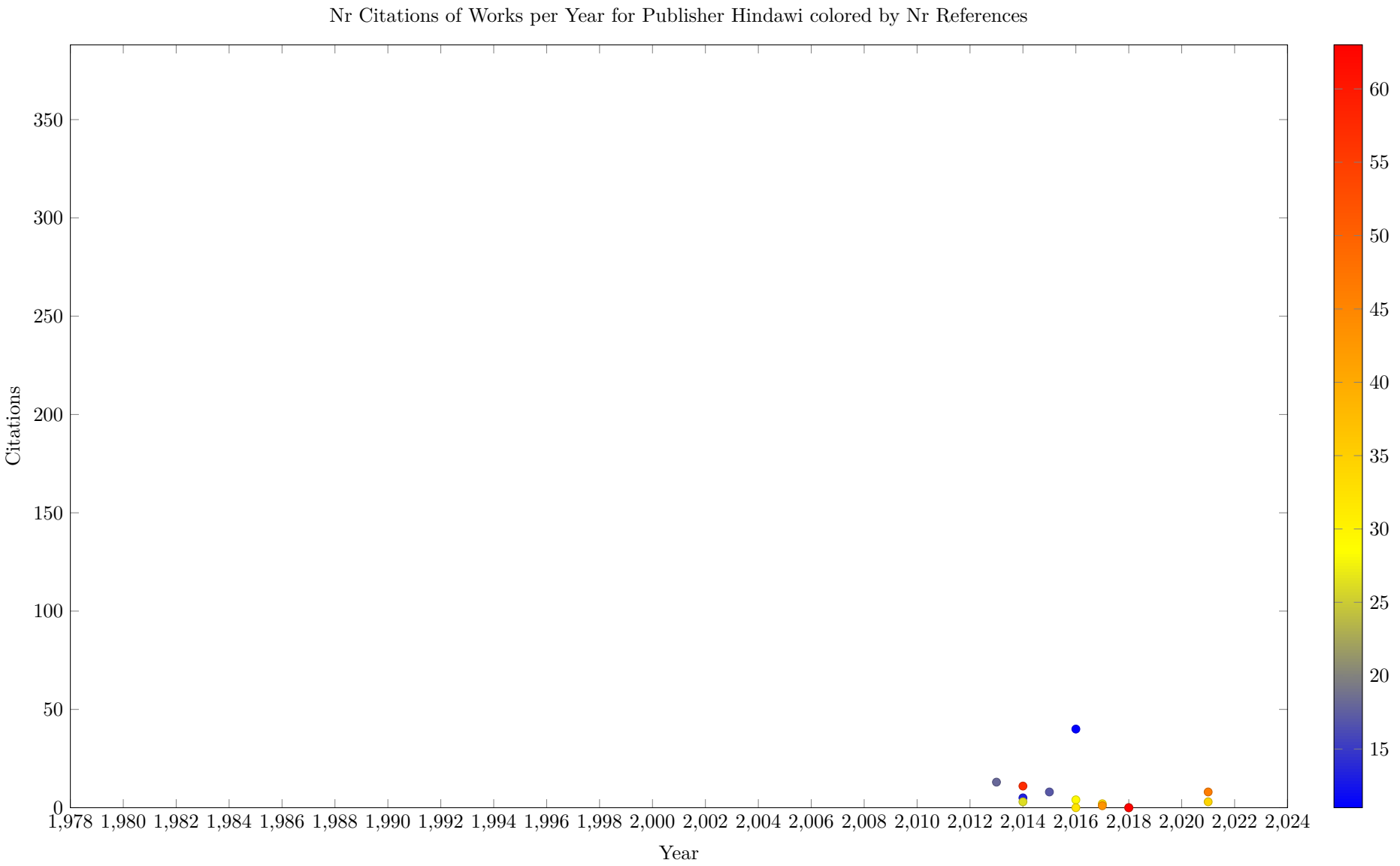
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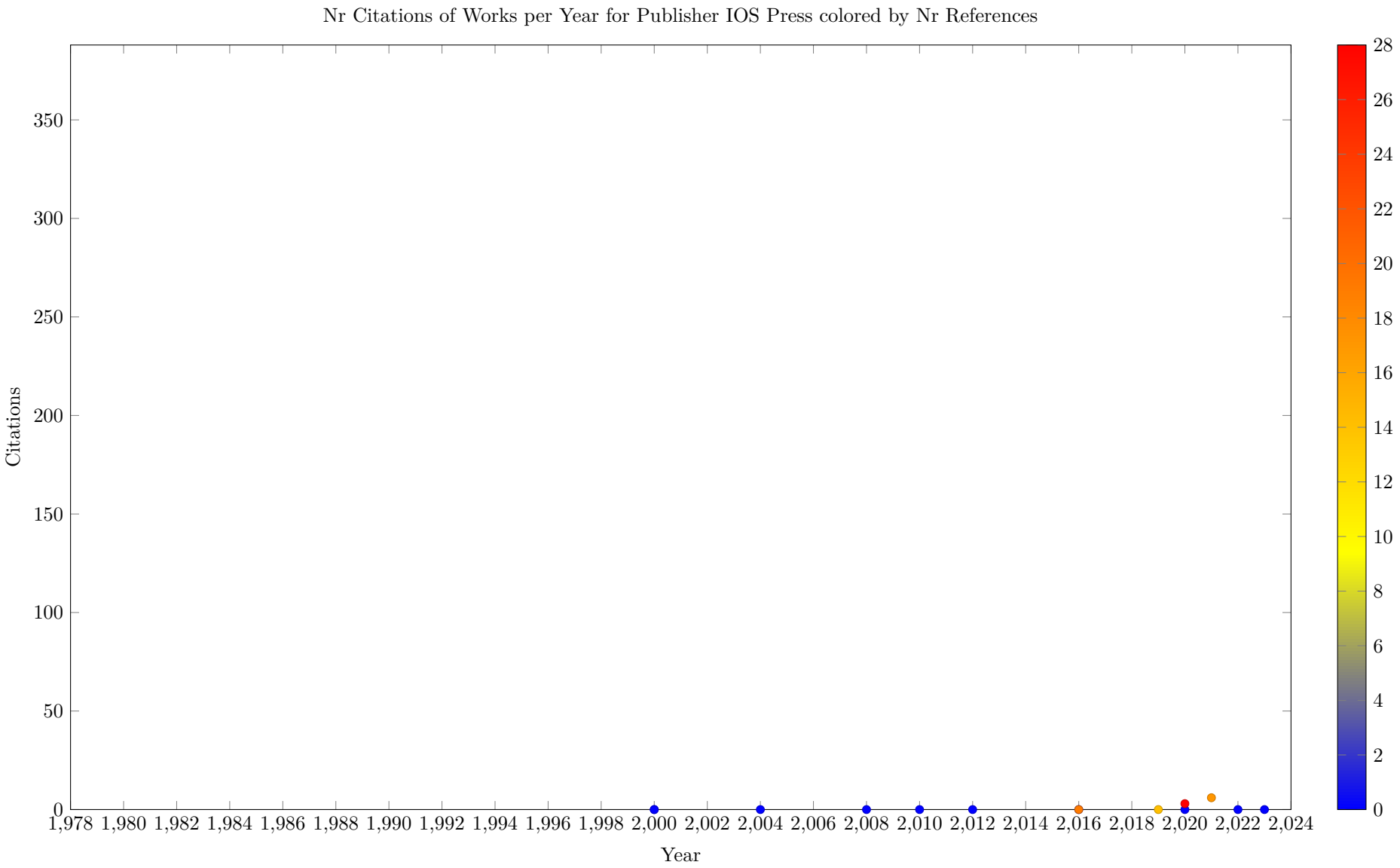
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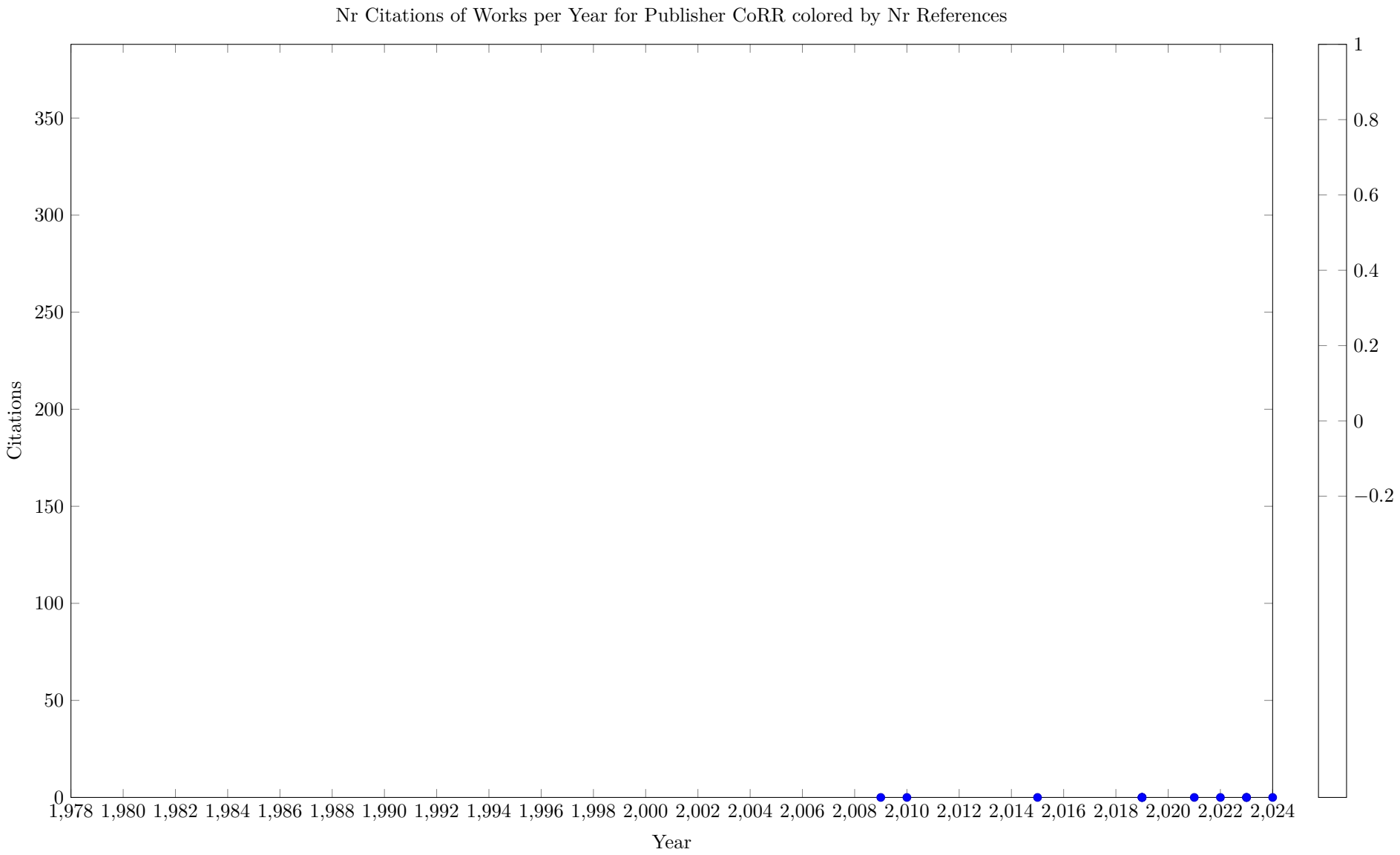
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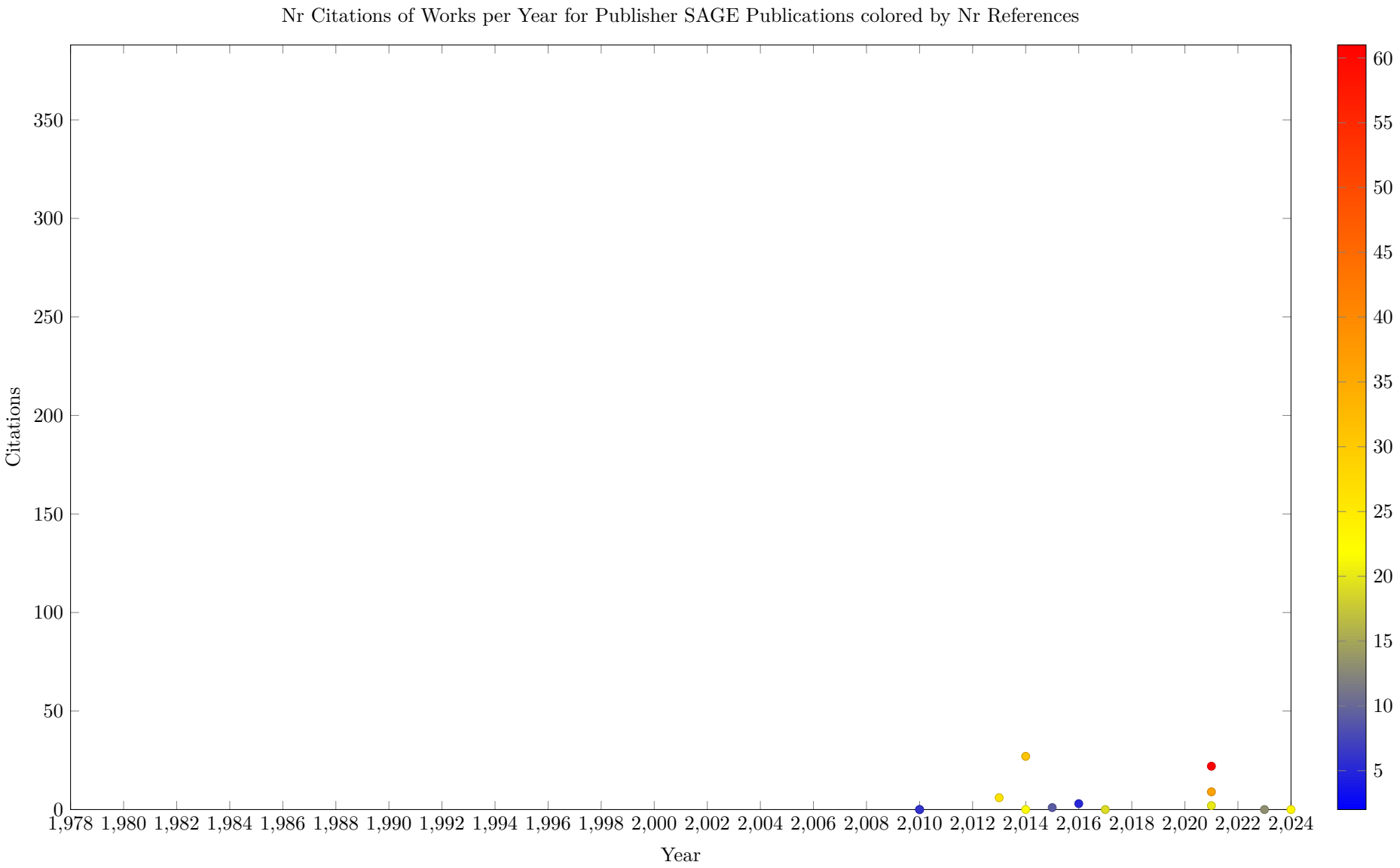
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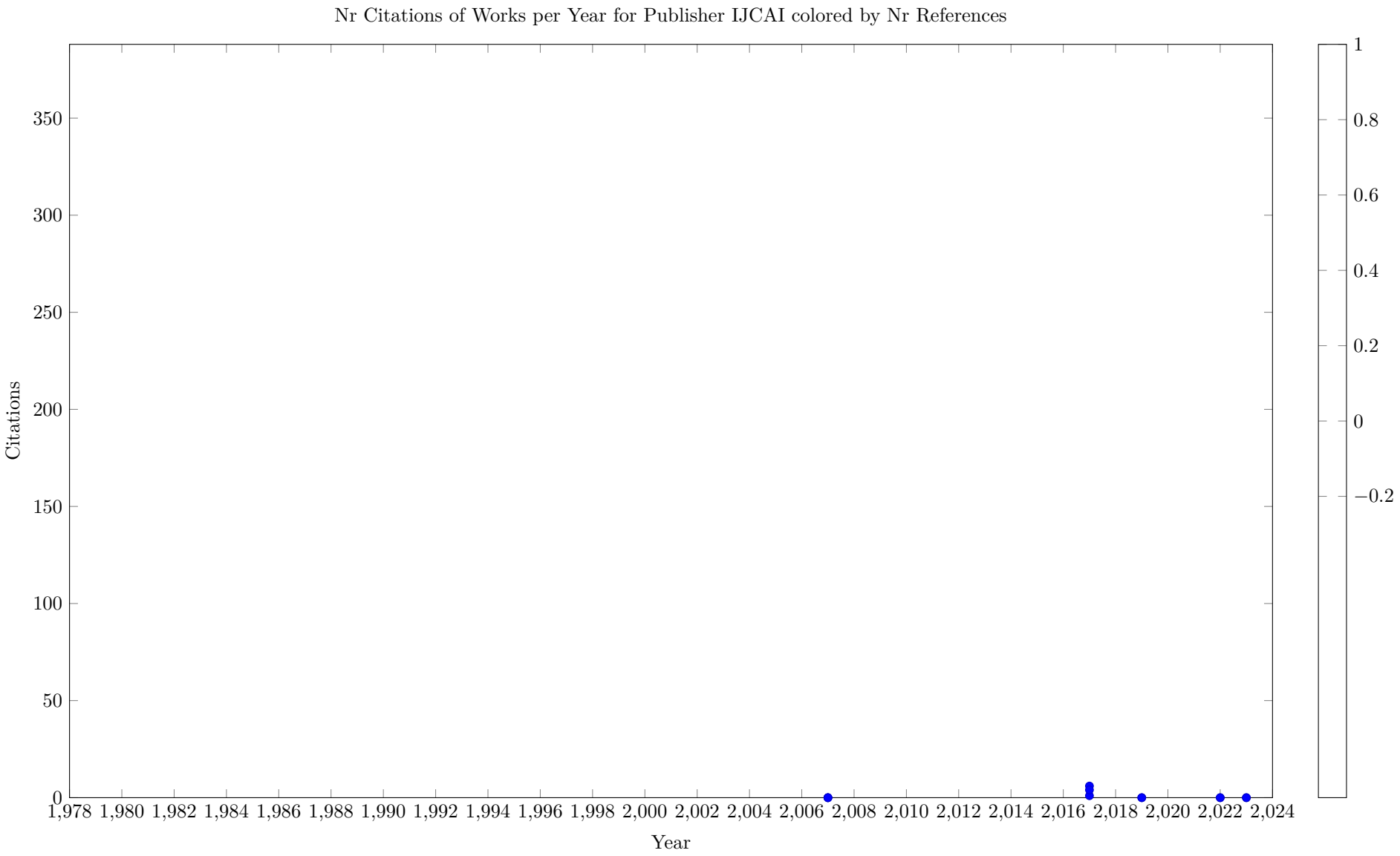
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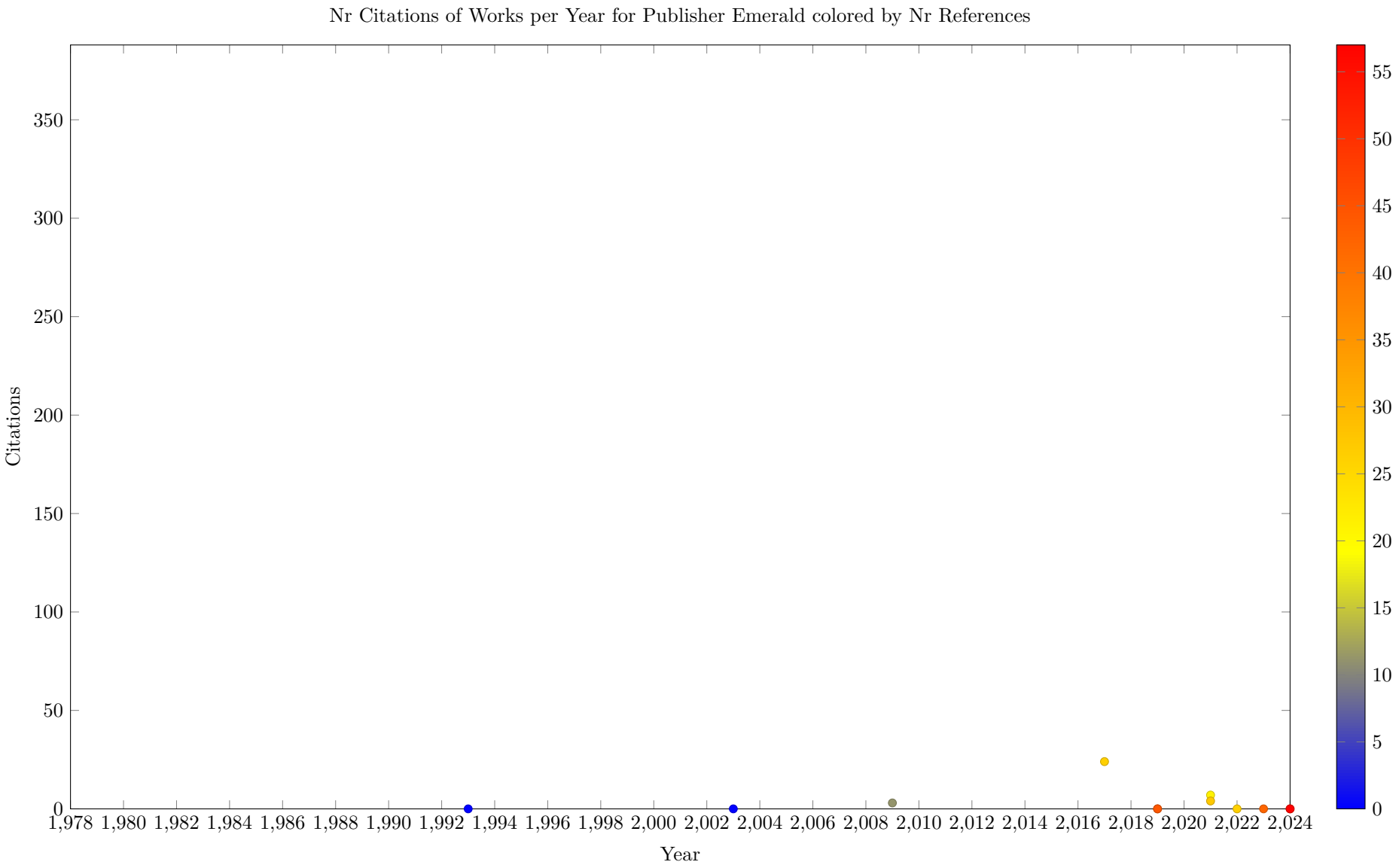
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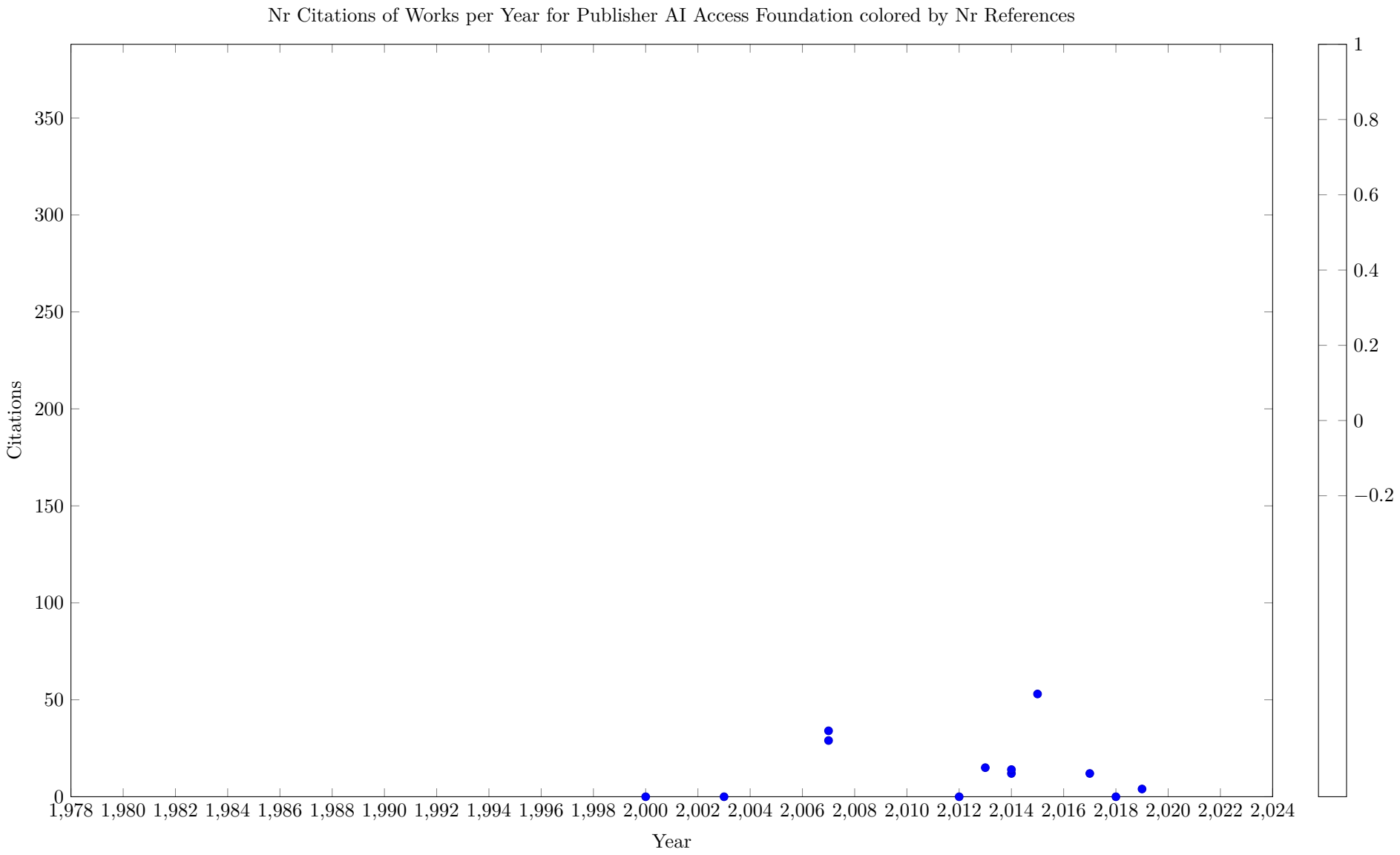
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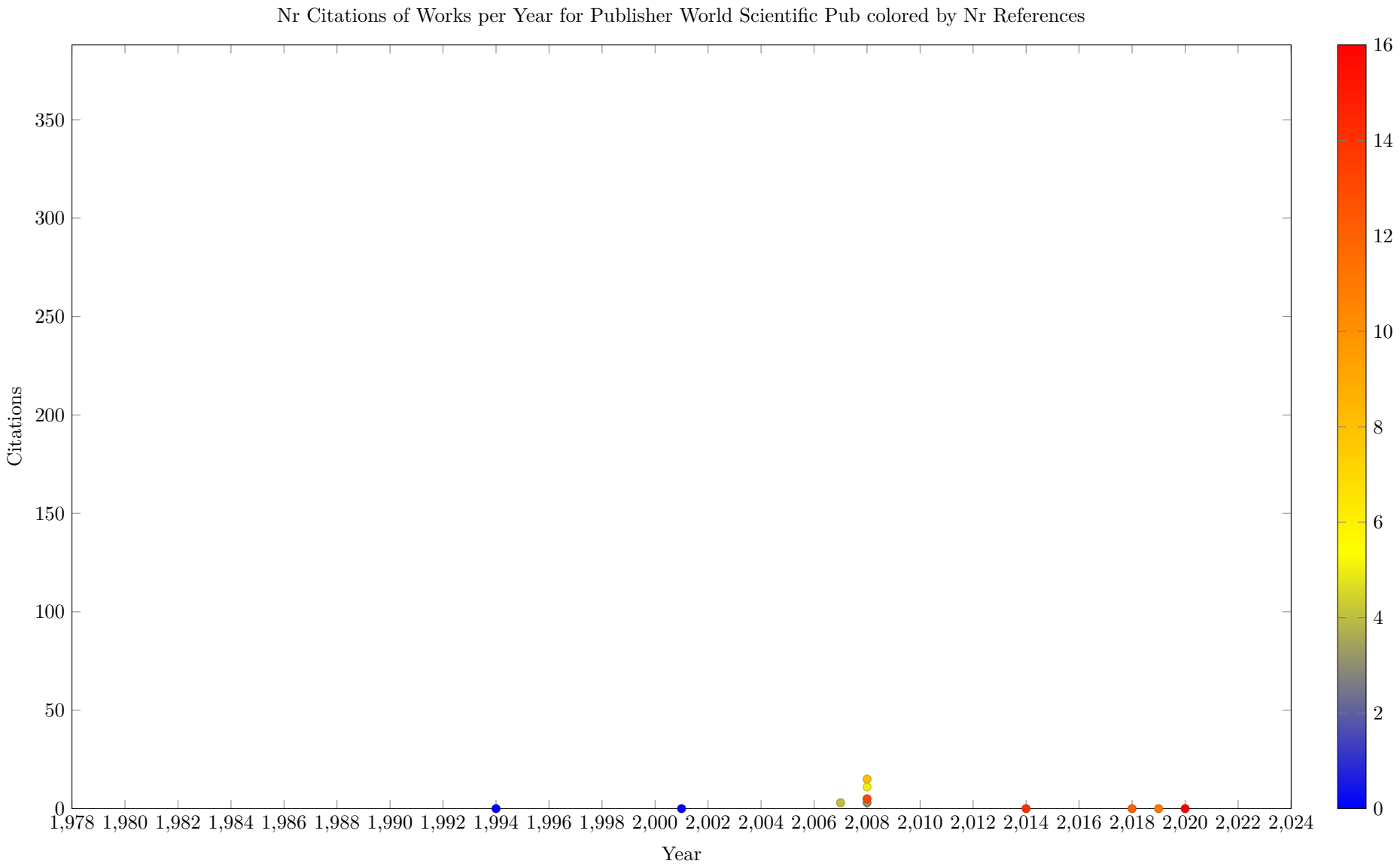
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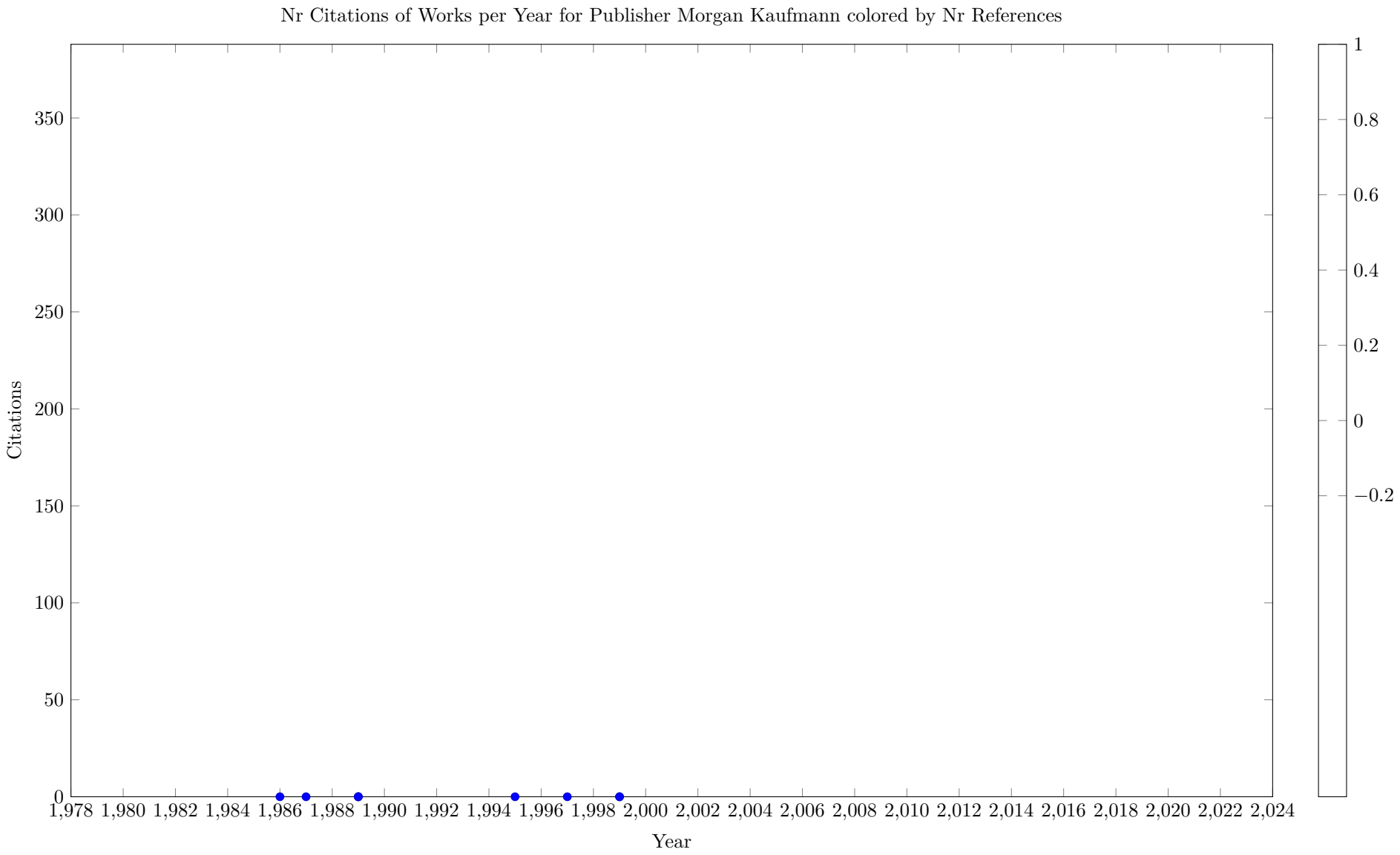
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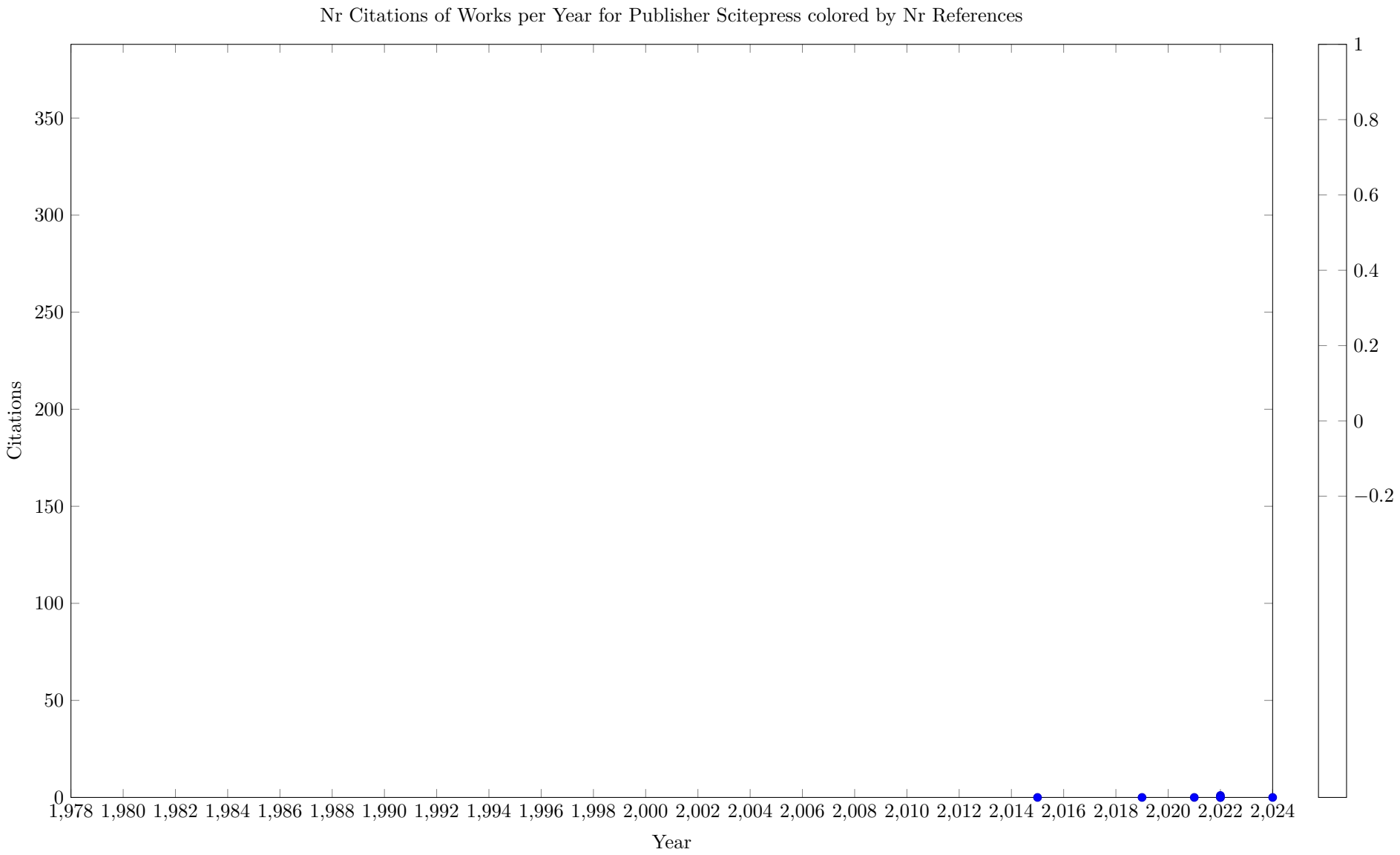
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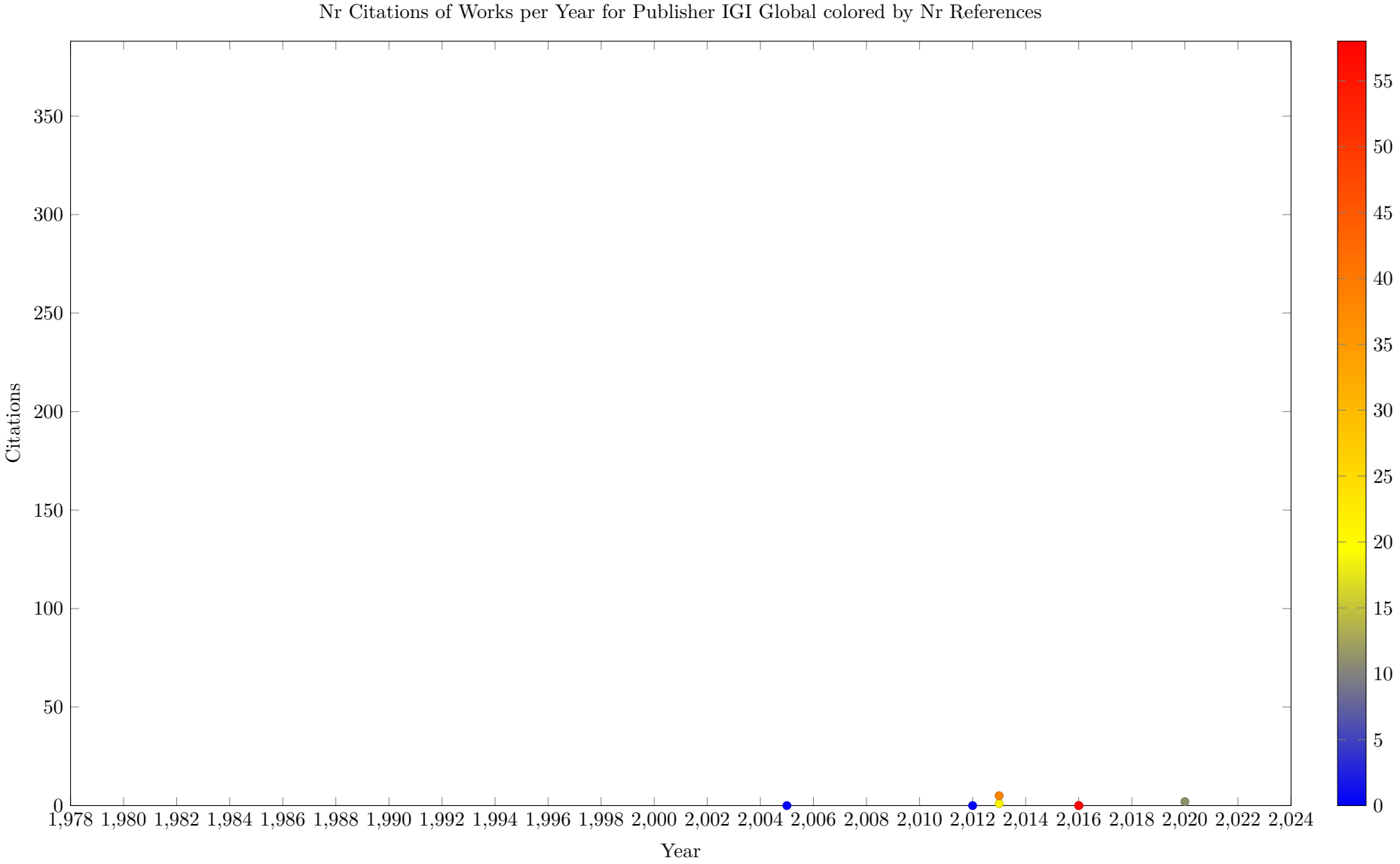
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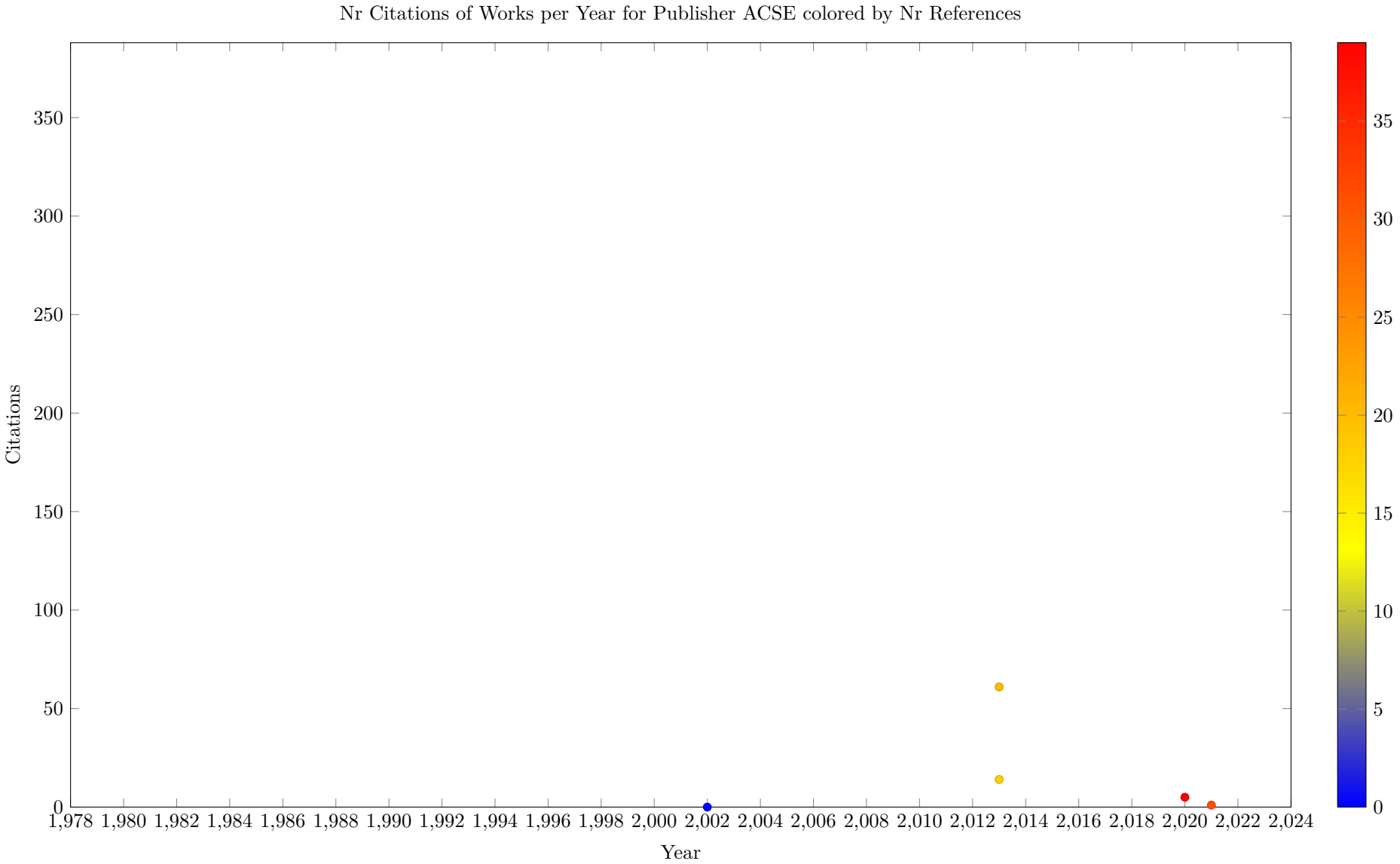
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Nr Citations of Works per Year for Publisher Inderscience Publishers colored by Nr References
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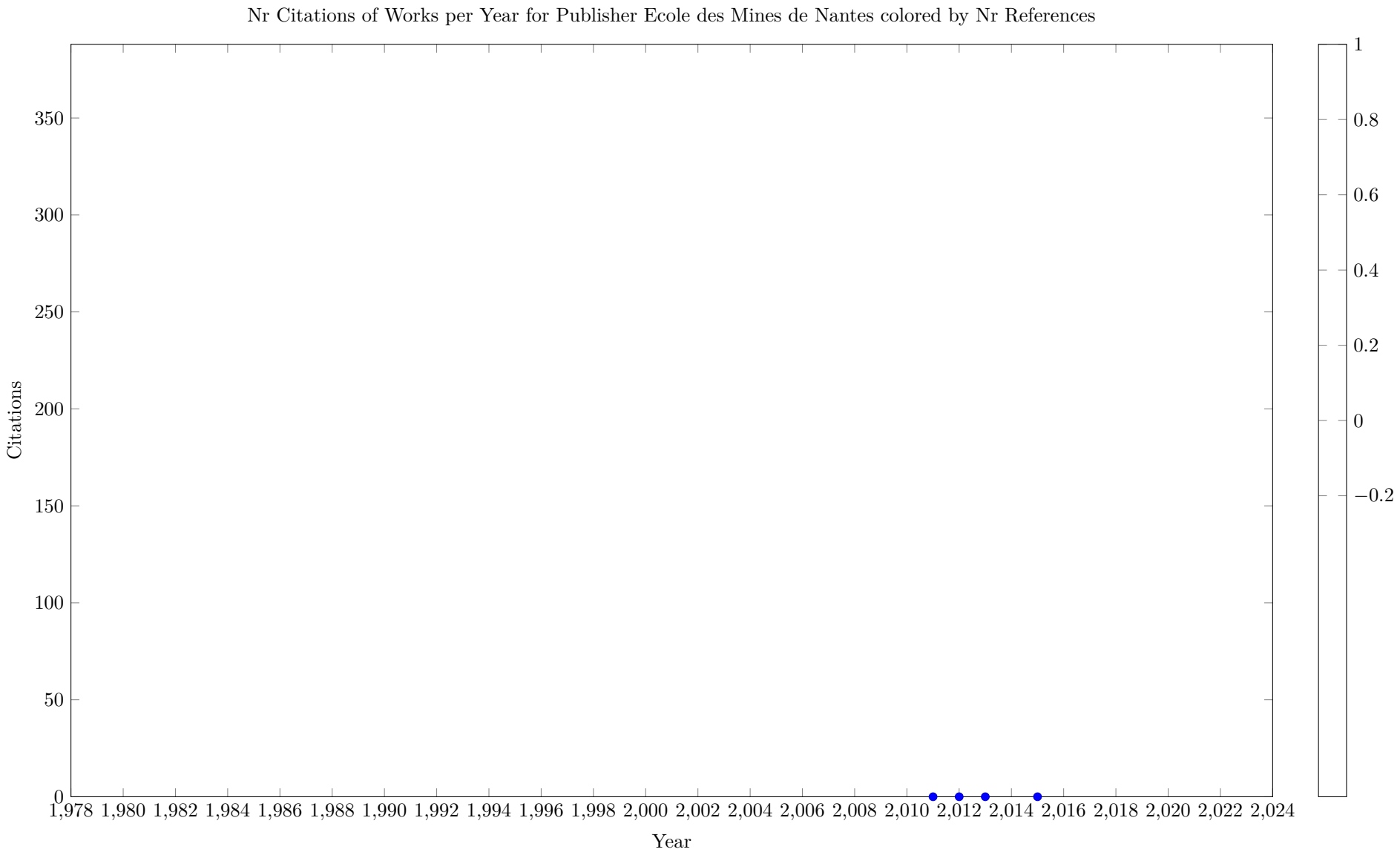
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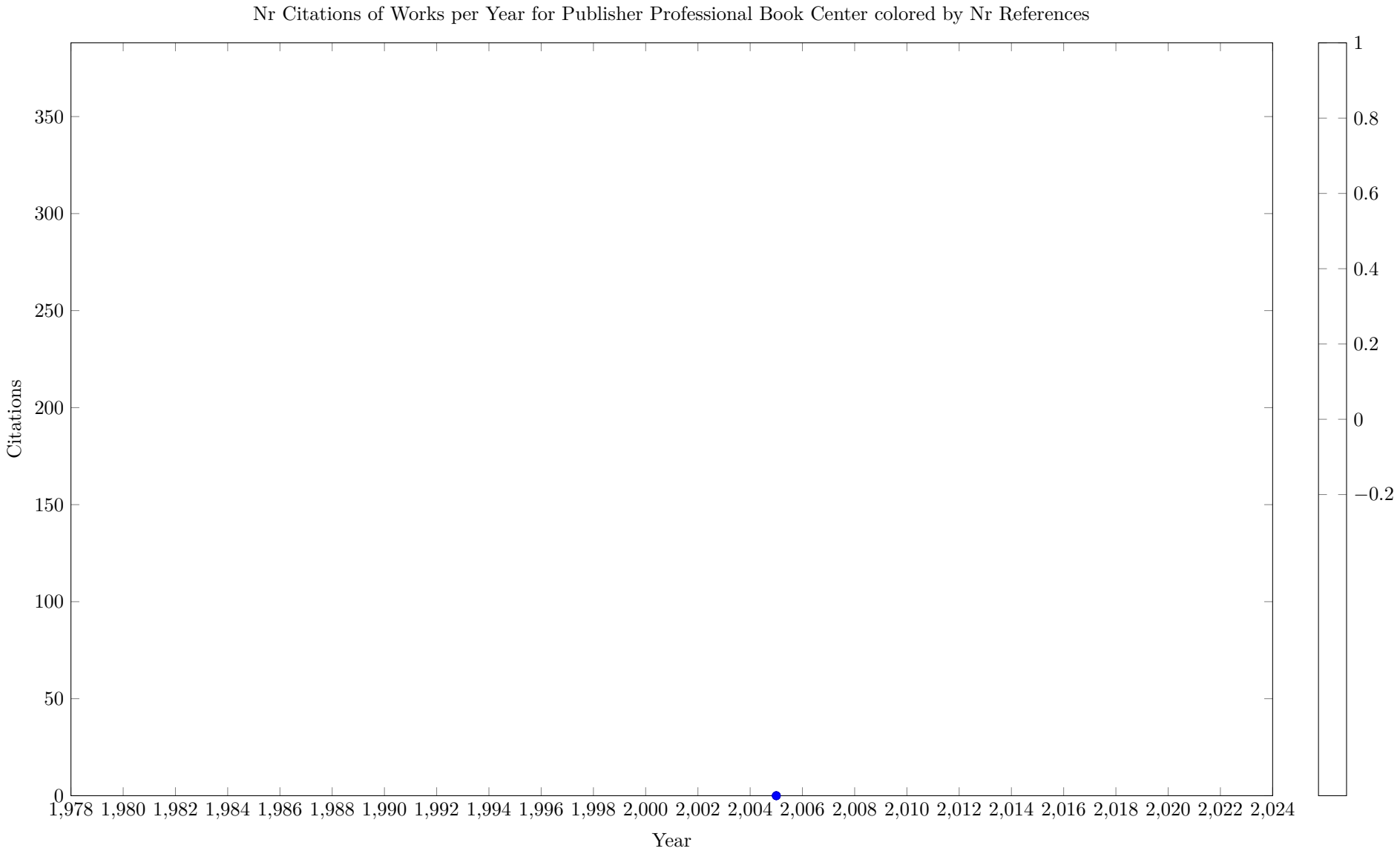
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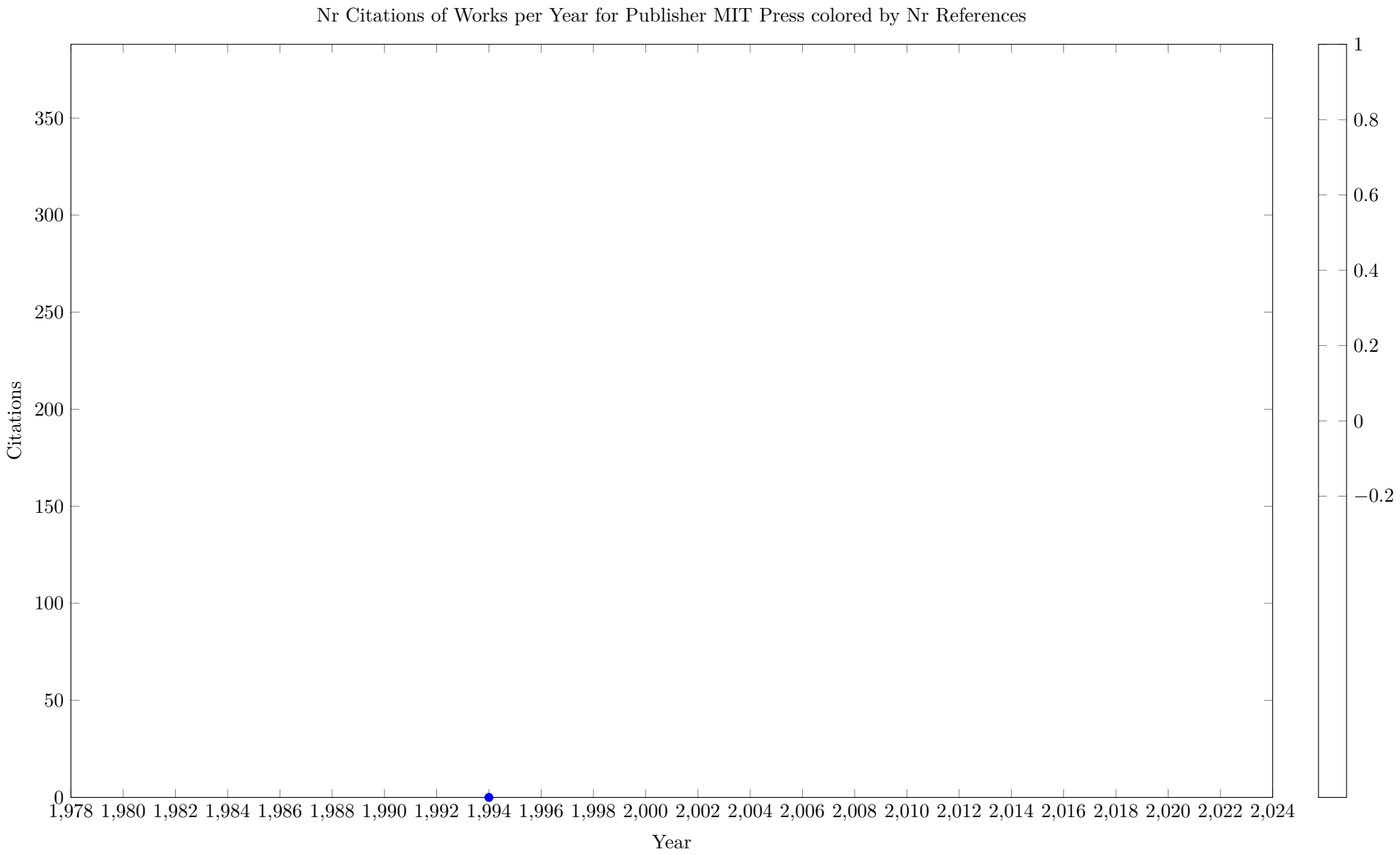
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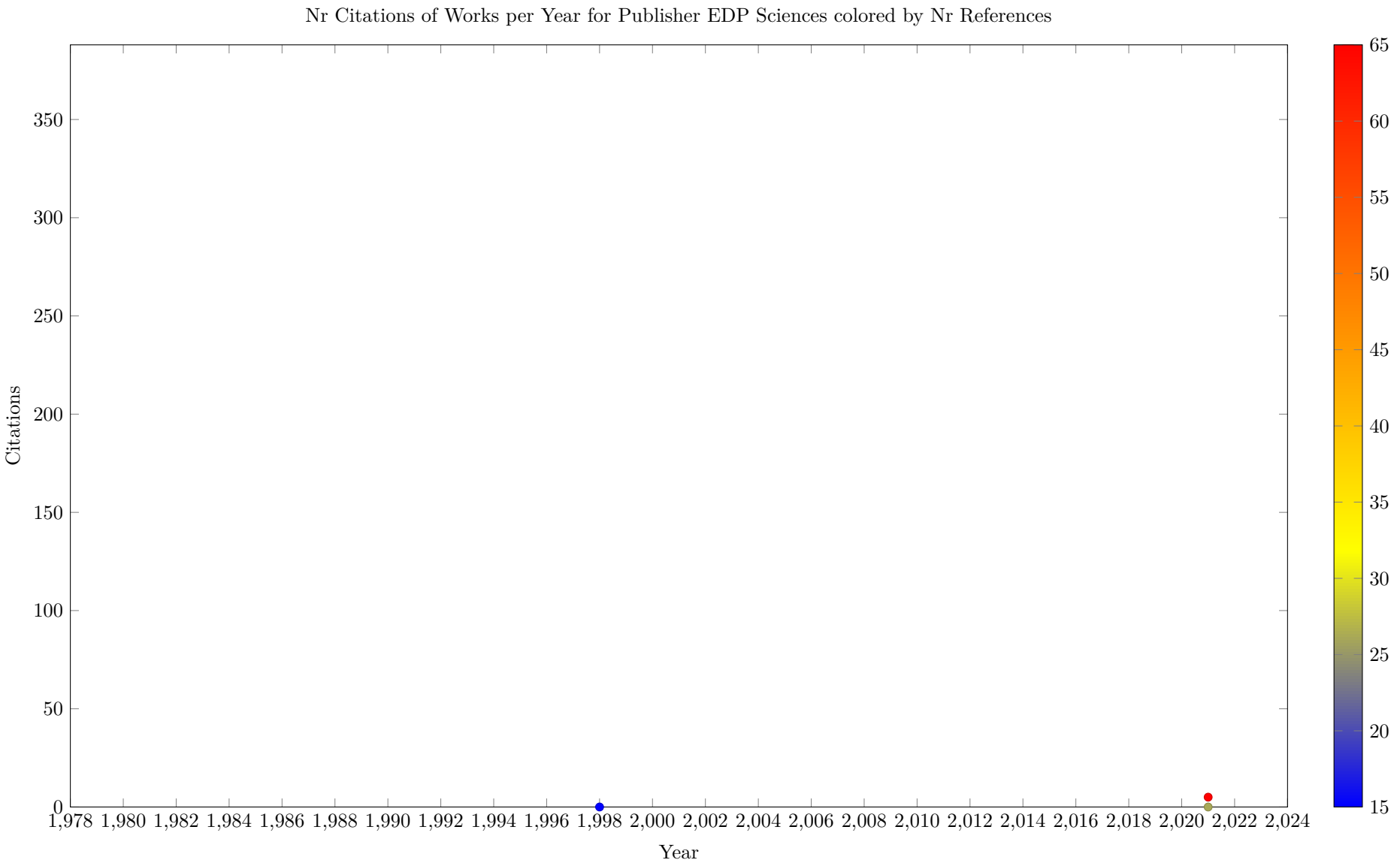
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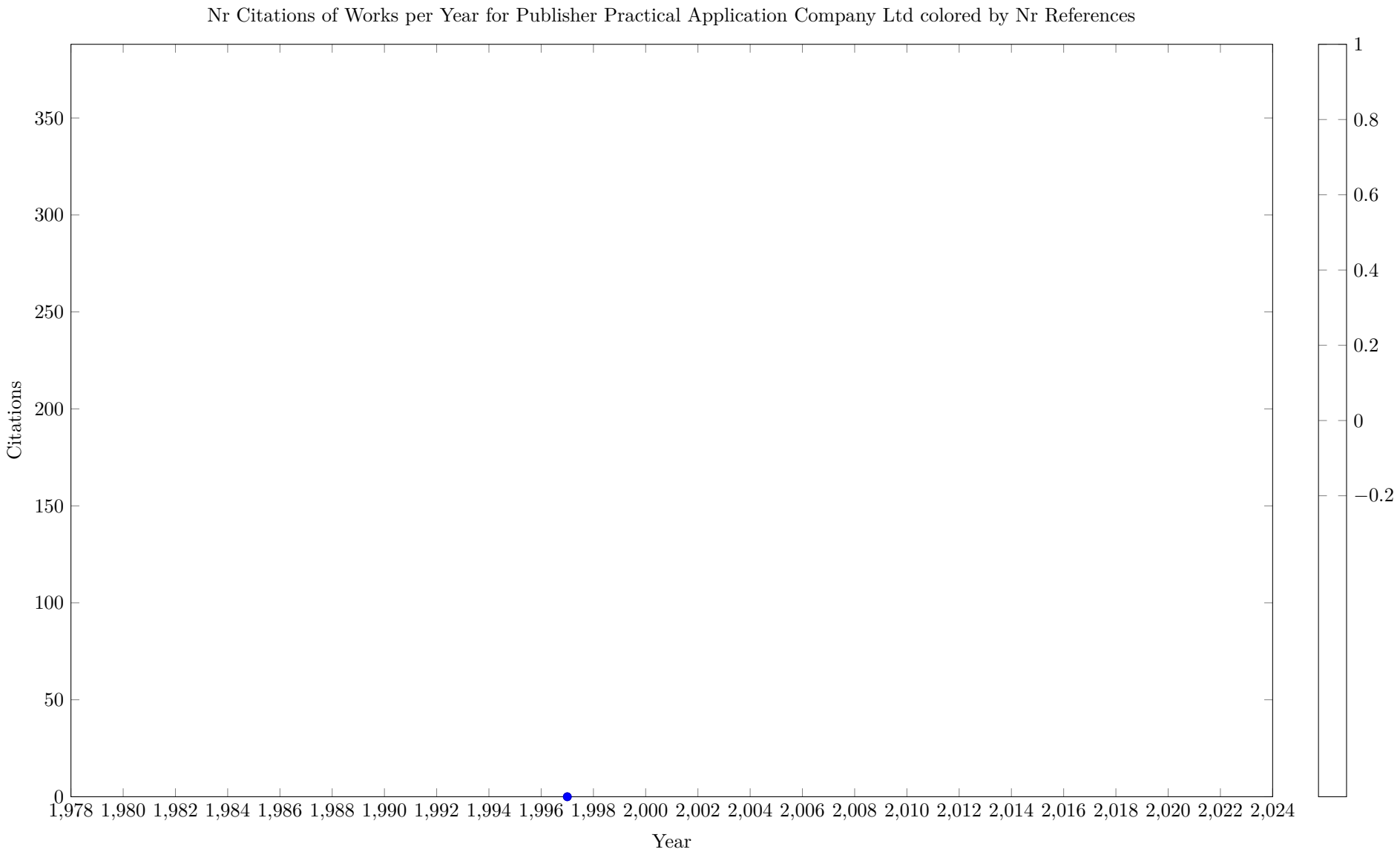
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