Publication Report for scheduling Survey

Helmut Simonis and Cemalettin Öztürk

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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.

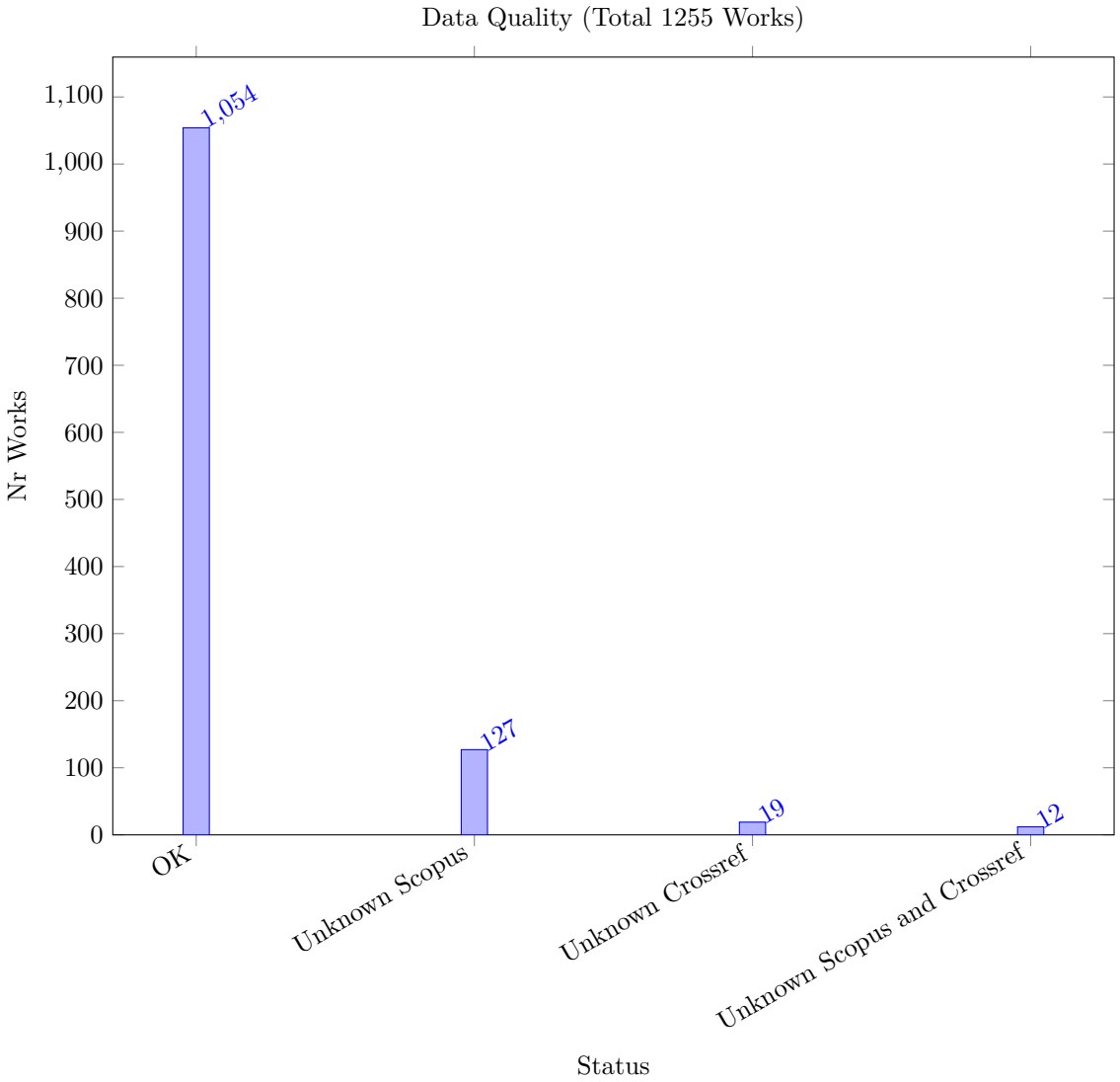

Data Quality (Total 1255 Works)
Nr Works
1,100
1,000
900
800
700
600
500
400
300
200
100
0
1,054
127
19
12
OK
Unknown Scopus
Unknown Crossref
Unknown Scopus and Crossref
Status

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
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

Key	DOI	Source Group	Year	Nr Citations	Crossref Citations	Scopus Citations	WoS Citations	Range Citations	Range Percentage
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	5	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	1	0	0	null	1	100.00
QinWSLS21	10.1109/tase.2019.2947398	OtherJournal	2021	12	19	0	null	19	100.00
GeibingerMM21	10.1609/aaai.v35i7.16789	AAAI	2021	0	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	3	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
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	1	2	0	null	2	100.00
NishikawaSTT19	10.15803/ijnc.9.2__131	OtherJournal	2019	3	3	0	null	3	100.00
BlazewiczEP19	10.1007/978-3-319-99849-7	Incoll	2019	38	38	0	null	38	100.00
SenderovichBB19	10.1609/icaps.v29i1.3504	ICAPS	2019	2	2	0	null	2	100.00
PinarbasiAY19	10.1108/aa-12-2018-0262	OtherJournal	2019	16	18	0	null	18	100.00
AlakaPY19	10.1007/s00500-019-04294-8	OtherJournal	2019	15	17	0	null	17	100.00
PachecoPR19	10.24963/ijcai.2019/161	IJCAI	2019	1	1	0	null	1	100.00
BhatnagarKL19	10.24963/ijcai.2019/803	IJCAI	2019	1	1	0	null	1	100.00
RiahiNS018	10.1609/icaps.v28i1.13895	ICAPS	2018	4	4	0	null	4	100.00
AgussurjaKL18	10.1609/aaai.v32i1.12086	AAAI	2018	4	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	10	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	3	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	3	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
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

Key	DOI	Source Group	Year	Nr Citations	Crossref Citations	Scopus Citations	WoS Citations	Range Citations	Range Percentage
Silva2014	10.1590/2238-1031.jtl.v8n4a9	OtherJournal	2014	2	2	0	null	2	100.00
Levine2014	10.1609/icaps.v24i1.13672	ICAPS	2014	17	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	11	14	0	null	14	100.00
BajestaniB11	10.1609/icaps.v21i1.13450	ICAPS	2011	2	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	1	1	0	null	1	100.00
Laborie2011	10.1007/978-3-642-23592-4_6	Inbook	2011	2	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	3	3	0	null	3	100.00
Bartak2005	10.4018/978-1-59140-450-7.ch010	Inbook	2005	3	3	0	null	3	100.00
Vazacopoulos2005	10.1007/0-387-26281-4_12	Inbook	2005	3	3	0	null	3	100.00
Zhang2005	10.1109/icmlc.2004.1380769	OtherConf	2005	1	0	0	null	1	100.00
DannaP04	10.1007/978-1-4419-8917-8_2	Inbook	2004	2	2	0	null	2	100.00
AjiliW04	10.1007/978-1-4419-8917-8_6	Inbook	2004	4	4	0	null	4	100.00
AggounV04	10.1007/978-3-540-24734-0_15	Inbook	2004	7	7	0	null	7	100.00
HenzMT04	10.1016/s0377-2217(03)00101-2	EJOR	2004	44	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	381	374	0	null	381	100.00
Sadykov2003	10.2139/ssrn.988640	Preprint	2003	3	3	0	null	3	100.00
Timpe2003	10.1007/978-3-662-05607-3_5	Inbook	2003	2	2	0	null	2	100.00
ElkhyariGJ02	10.1007/3-540-46135-3_49	CP	2002	1	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	14	14	0	null	14	100.00
Hooker02	10.1287/ijoc.14.4.295.2828	InformsJC	2002	94	93	0	null	94	100.00
Hentenryck02	10.1287/ijoc.14.4.345.2826	Background	2002	48	50	0	null	50	100.00
EastonNT02	10.1007/978-3-540-45157-0_6	OtherConf	2002	48	50	0	null	50	100.00
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	296	302	0	null	302	100.00
BosiM2001	10.1002/1097-024x(200101)31:1<17::aid-spe355>3.0.co;2-l	OtherJournal	2001	3	3	0	null	3	100.00
Henz01	10.1287/opre.49.1.163.11193	ORJournal	2001	65	68	0	null	68	100.00

Key	DOI	Source Group	Year	Nr Citations	Crossref Citations	Scopus Citations	WoS Citations	Range Citations	Range Percentage
Rgin2001	10.1090/dimacs/057/07	Inbook	2001	28	29	0	null	29	100.00
Baptiste2001	10.1007/978-1-4615-1479-4_2	Inbook	2001	1	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	185	186	0	null	186	100.00
Simonis99	10.1007/3-540-45406-3_6	OtherConf	1999	5	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	18	18	0	null	18	100.00
CarlssonKA99	10.1007/3-540-49201-1_23	OtherConf	1999	1	1	0	null	1	100.00
PembertonG98	10.1090/dimacs/057/06	OtherConf	1998	26	0	0	null	26	100.00
MarriottS98	10.7551/mitpress/5625.001.0001	Background	1998	410	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	9	8	0	null	9	100.00
Jaffar1998	10.1093/oso/9780198537922.003.0012	Inbook	1998	3	3	0	null	3	100.00
Mesghouni1997	10.1007/978-0-387-35086-8_12	Inbook	1997	2	2	0	null	2	100.00
Simonis95a	10.1007/3-540-60794-3_11	OtherConf	1995	1	1	0	null	1	100.00
Schiex1994	10.1142/s0218213094000108	OtherJournal	1994	65	66	0	null	66	100.00
Freuder1994	10.7551/mitpress/2122.001.0001	Book	1994	23	22	0	null	23	100.00
Icmeli1993	10.1108/01443579310046454	OtherJournal	1993	97	99	0	null	99	100.00
Barber1993	10.1145/152947.152955	OtherJournal	1993	13	13	0	null	13	100.00
BaptisteLV92	10.1109/robot.1992.220195	OtherConf	1992	13	11	0	null	13	100.00
Demeulemeester1992	10.1287/mnsc.38.12.1803	ORJournal	1992	380	387	0	null	387	100.00
Elmaghraby1992	10.1287/mnsc.38.9.1245	ORJournal	1992	117	121	0	null	121	100.00
CarlierP90	10.1007/bf03543071	Background	1990	112	114	0	null	114	100.00
CarlierP89	10.1287/mnsc.35.2.164	Background	1989	516	524	0	null	524	100.00
PritskerWW69	10.1287/mnsc.16.1.93	Background	1969	504	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
Demeulemeester1992	10.1287/mnsc.38.12.1803	ORJournal	1992	380	387	0	null	387	100.00
BaptistePN01	10.1007/978-1-4615-1479-4	Book	2001	296	302	0	null	302	100.00
Hooker00	10.1002/9781118033036	Book	2000	185	186	0	null	186	100.00
BensanaLV99	10.1023/a:1026488509554	Constraints	1999	99	0	150	null	150	100.00
JainM99	10.1016/s0377-2217(98)00113-1	EJOR	1999	490	503	630	null	140	22.22
Elmaghraby1992	10.1287/mnsc.38.9.1245	ORJournal	1992	117	121	0	null	121	100.00
SakkoutW00	10.1023/a:1009856210543	Constraints	2000	73	0	105	null	105	100.00

Key	DOI	Source Group	Year	Nr Citations	Crossref Citations	Scopus Citations	WoS Citations	Range Citations	Range Percentage
Icmeli1993	10.1108/01443579310046454	OtherJournal	1993	97	99	0	null	99	100.00
Smith-Miles2009	10.1145/1456650.1456656	OtherJournal	2009	298	307	395	null	97	24.56
Hooker02	10.1287/ijoc.14.4.295.2828	InformsJC	2002	94	93	0	null	94	100.00
MintonJPL92	10.1016/0004-3702(92)90007-k	AIJournal	1992	437	440	525	null	88	16.76
BaptistePN99	10.1023/a:1018995000688	ORJournal	1999	72	0	85	null	85	100.00
Younes2003	10.1613/jair.1136	OtherJournal	2003	54	55	128	null	74	57.81
OhrimenkoSC09	10.1007/s10601-008-9064-x	Constraints	2009	127	128	198	null	71	35.86
BlazewiczDP96	10.1016/0377-2217(95)00362-2	EJOR	1996	344	357	412	null	68	16.50
Henz01	10.1287/opre.49.1.163.11193	ORJournal	2001	65	68	0	null	68	100.00
RodosekWH99	10.1023/a:1018904229454	ORJournal	1999	53	0	67	null	67	100.00
Schiex1994	10.1142/s0218213094000108	OtherJournal	1994	65	66	0	null	66	100.00
ArtiguesDN08	10.1002/9780470611227	Book	2008	63	60	0	null	63	100.00
BaptisteP00	10.1023/a:1009822502231	Constraints	2000	46	0	62	null	62	100.00
BeldiceanuC94	10.1016/0895-7177(94)90127-9	OtherJournal	1994	167	169	223	null	56	25.11
LaborieRSV18	10.1007/s10601-018-9281-x	Constraints	2018	148	178	203	null	55	27.09
Fisher1985	10.1287/inte.15.2.10	OtherJournal	1985	462	473	517	null	55	10.64
HookerO03	10.1007/s10107-003-0375-9	OtherJournal	2003	317	333	371	null	54	14.56
MengZRZL20	10.1016/j.cie.2020.106347	OtherJournal	2020	100	133	152	null	52	34.21
Wallace96	10.1007/bf00143881	Constraints	1996	87	89	138	null	51	36.96
NuijtenP98	10.1023/a:1009687210594	OtherJournal	1998	42	0	50	null	50	100.00
EastonNT02	10.1007/978-3-540-45157-0_6	OtherConf	2002	48	50	0	null	50	100.00
Yang2000	10.1109/72.839016	OtherJournal	2000	37	0	48	null	48	100.00
Laborie03	10.1016/s0004-3702(02)00362-4	AIJournal	2003	128	129	175	null	47	26.86
HenzMT04	10.1016/s0377-2217(03)00101-2	EJOR	2004	44	47	0	null	47	100.00
BeckR03	10.1023/a:1021849405707	ORJournal	2003	29	0	45	null	45	100.00
AchterbergBKW08	10.1007/978-3-540-68155-7_4	CPAIOR	2008	80	80	125	null	45	36.00
JainG01	10.1287/ijoc.13.4.258.9733	InformsJC	2001	279	284	321	null	42	13.08
Zhu2006	10.1287/ijoc.1040.0121	InformsJC	2006	78	85	118	null	40	33.90
Michel2012	10.1007/978-3-642-29828-8_15	CPAIOR	2012	47	48	87	null	40	45.98
Laborie09	10.1007/978-3-642-01929-6_12	CPAIOR	2009	53	52	91	null	39	42.86
KendallKRU10	10.1016/j.cor.2009.05.013	ORJournal	2010	181	186	220	161	39	17.73
Gent1996	10.1007/3-540-61551-2_74	CP	1996	54	56	93	null	39	41.94
BlazewiczEP19	10.1007/978-3-319-99849-7	Incoll	2019	38	38	0	null	38	100.00
HarjunkoskiMBC14	10.1016/j.compchemeng.2013.12.001	OtherJournal	2014	381	393	418	null	37	8.85
SadehF96	10.1016/0004-3702(95)00098-4	AIJournal	1996	95	97	131	null	36	27.48
BeckW07	10.1613/jair.2080	OtherJournal	2007	27	31	61	null	34	55.74
Ham18	10.1016/j.trc.2018.03.025	OtherJournal	2018	164	192	197	null	33	16.75
MercierH08	10.1287/ijoc.1070.0226	InformsJC	2008	32	33	0	null	33	100.00
PerronSF04	10.1007/978-3-540-30201-8_35	CP	2004	34	34	67	null	33	49.25
SchildW00	10.1023/a:1009804226473	Constraints	2000	23	0	32	null	32	100.00
CorreaLR07	10.1016/j.cor.2005.07.004	ORJournal	2007	106	114	137	null	31	22.63
LiW08	10.1007/s10951-008-0079-3	OtherJournal	2008	113	123	144	null	31	21.53
Lindauer2015	10.1613/jair.4726	OtherJournal	2015	53	58	84	null	31	36.90

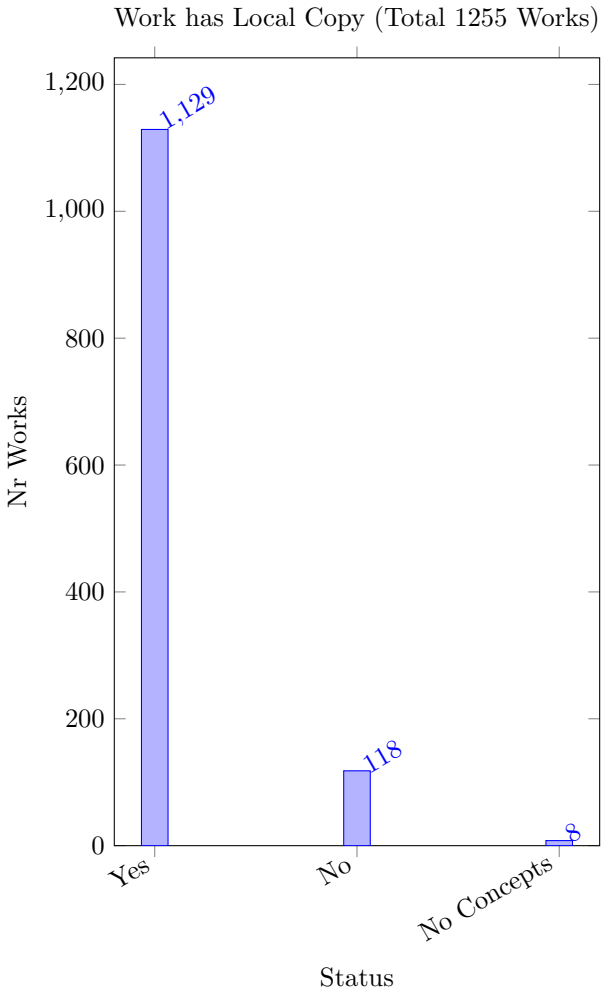
We only have Web of Science data in a few bibtex entries, we here try to evaluate their citation numbers on those bib entries which are from WoS.

Table 5: Works with WoS Citation Counts

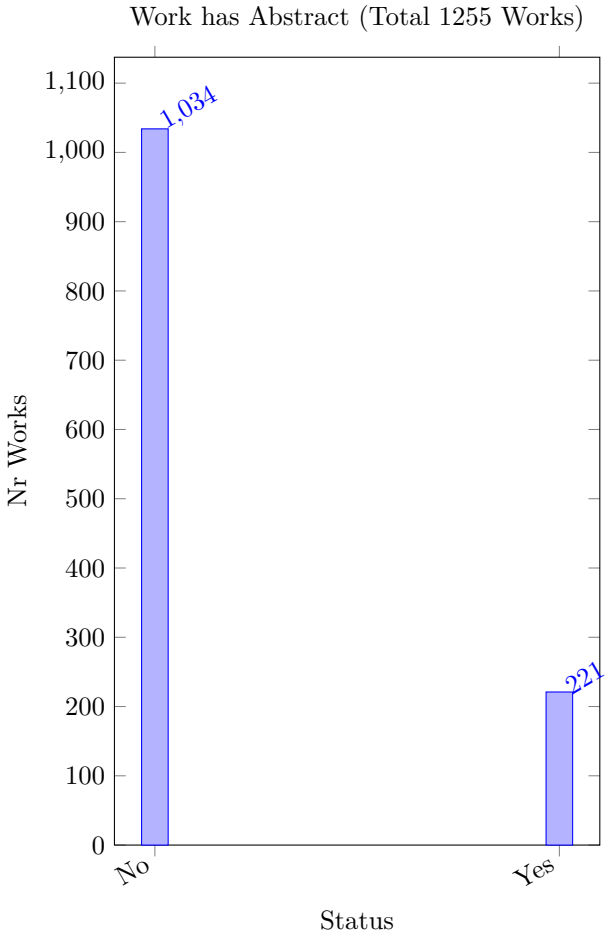
Key	DOI	Source Group	Year	Nr Citations	Crossref Citations	Scopus Citations	WoS Citations	Range Citations	Range Percentage
KendallKRU10	10.1016/j.cor.2009.05.013	ORJournal	2010	181	186	220	161	39	17.73
MeskensDL13	10.1016/j.dss.2012.10.019	OtherJournal	2013	102	102	116	103	14	12.07
RasmussenT07	10.1016/j.ejor.2005.10.063	EJOR	2007	60	62	71	53	11	15.49
Ribeiro12	10.1111/j.1475-3995.2011.00819.x	OtherJournal	2012	47	52	54	41	7	12.96
ElfJR03	10.1016/s0167-6377(03)00025-7	OtherJournal	2003	41	41	45	34	4	8.89
Trick03	10.1007/978-3-540-45157-0_4	OtherConf	2003	22	24	39	34	17	43.59
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	7	7	12	12	5	41.67
RasmussenT09	10.1007/s10479-008-0384-4	ORJournal	2009	8	9	9	8	1	11.11
Trick11	10.1007/978-1-4419-1644-0_15	Incoll	2011	2	2	5	5	3	60.00
LiuLH19a	10.5220/0007252300290039	OtherConf	2019	3	3	4	4	1	25.00
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	3	3	4	3	1	25.00
GhandehariK22	10.1016/j.apm.2022.01.001	OtherJournal	2022	4	4	4	3	0	0.00
BulckG22	10.1007/s10951-021-00717-3	OtherJournal	2022	2	3	3	3	1	33.33
Perron05	10.1007/11564751_67	CP	2005	1	1	2	1	1	50.00
LiuLH18	10.1007/978-3-030-05918-7_7	OtherConf	2018	2	2	1	1	1	50.00
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 1255 Works)
1,200
1,000
800
600
400
200
0
Nr Works
1,129
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

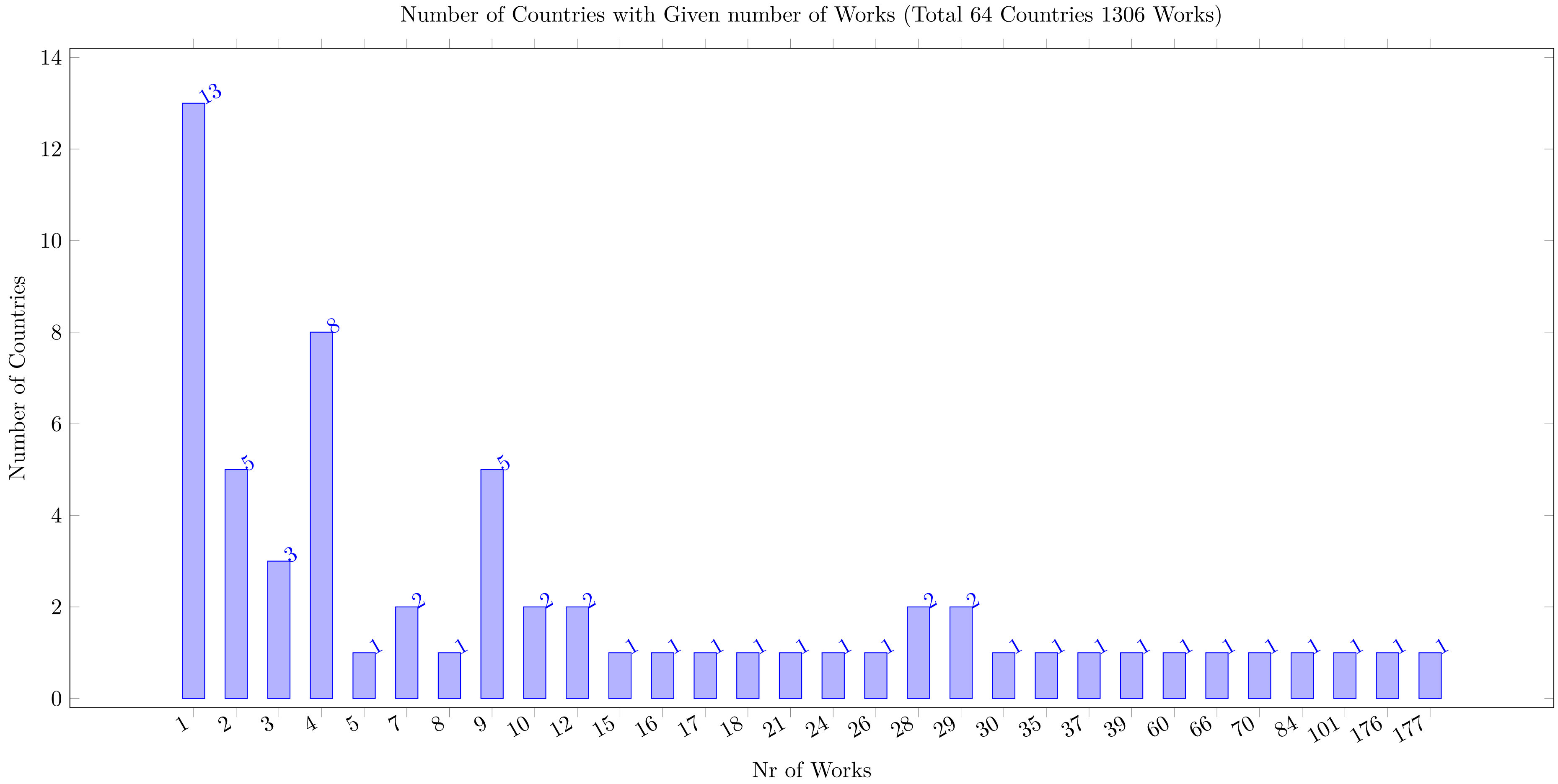
Key	File

2.5 Missing Publisher

Table 7: Missing Publisher

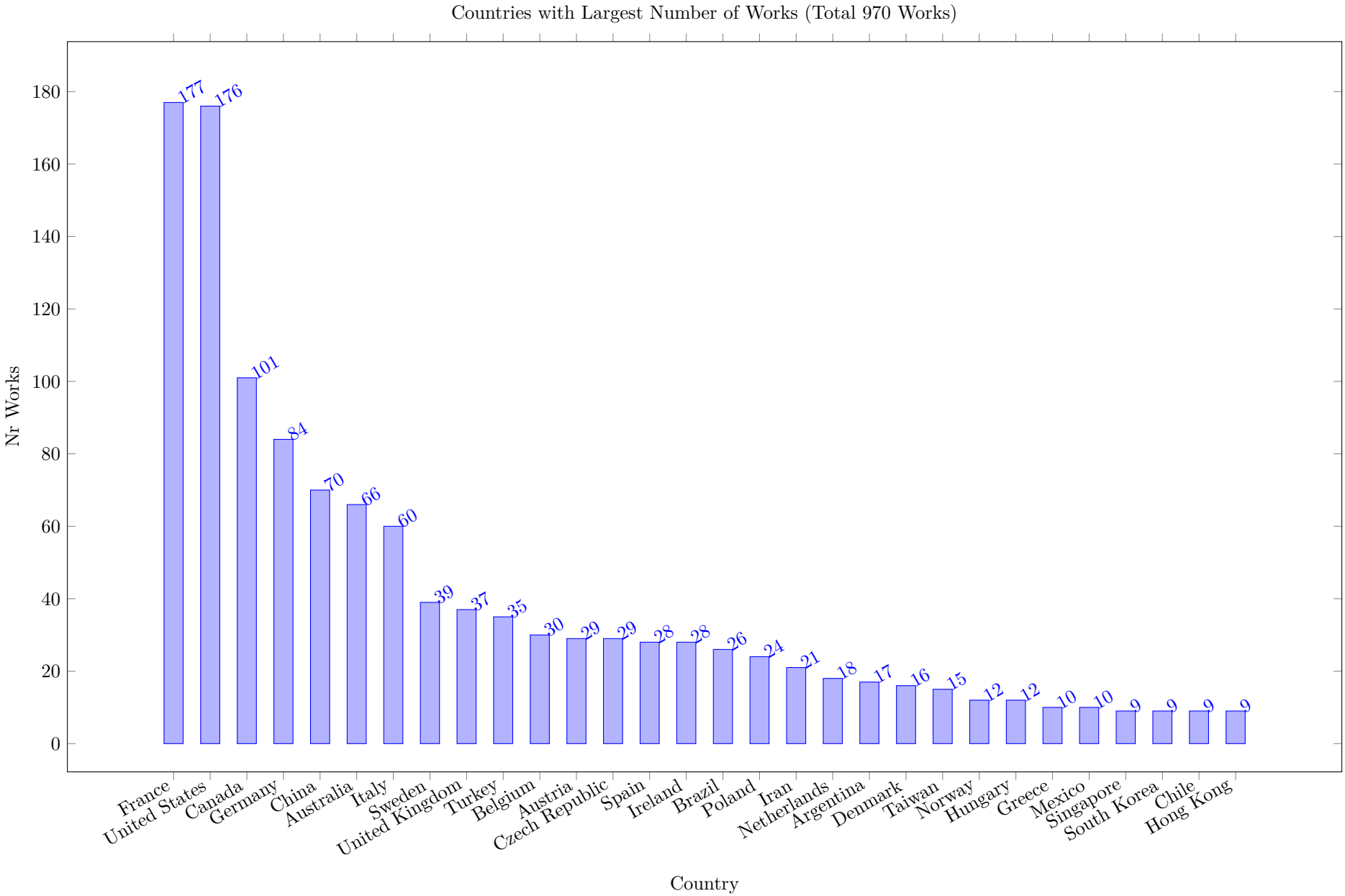
Key	DOI	Source Group	Year	Nr Citations	Crossref Citations	Scopus Citations	WoS Citations	Range Citations	Range Percentage

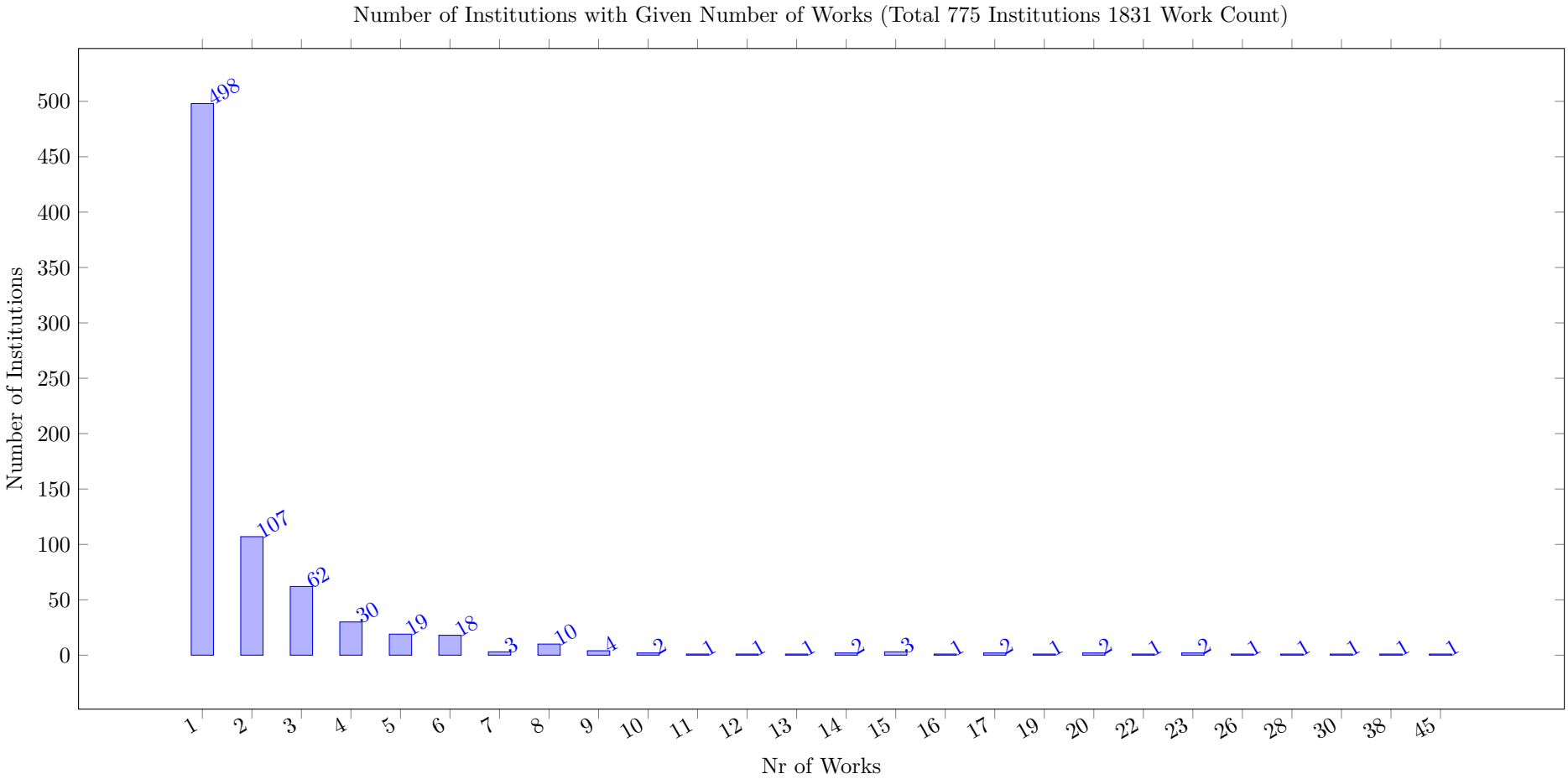
3 Works by Location



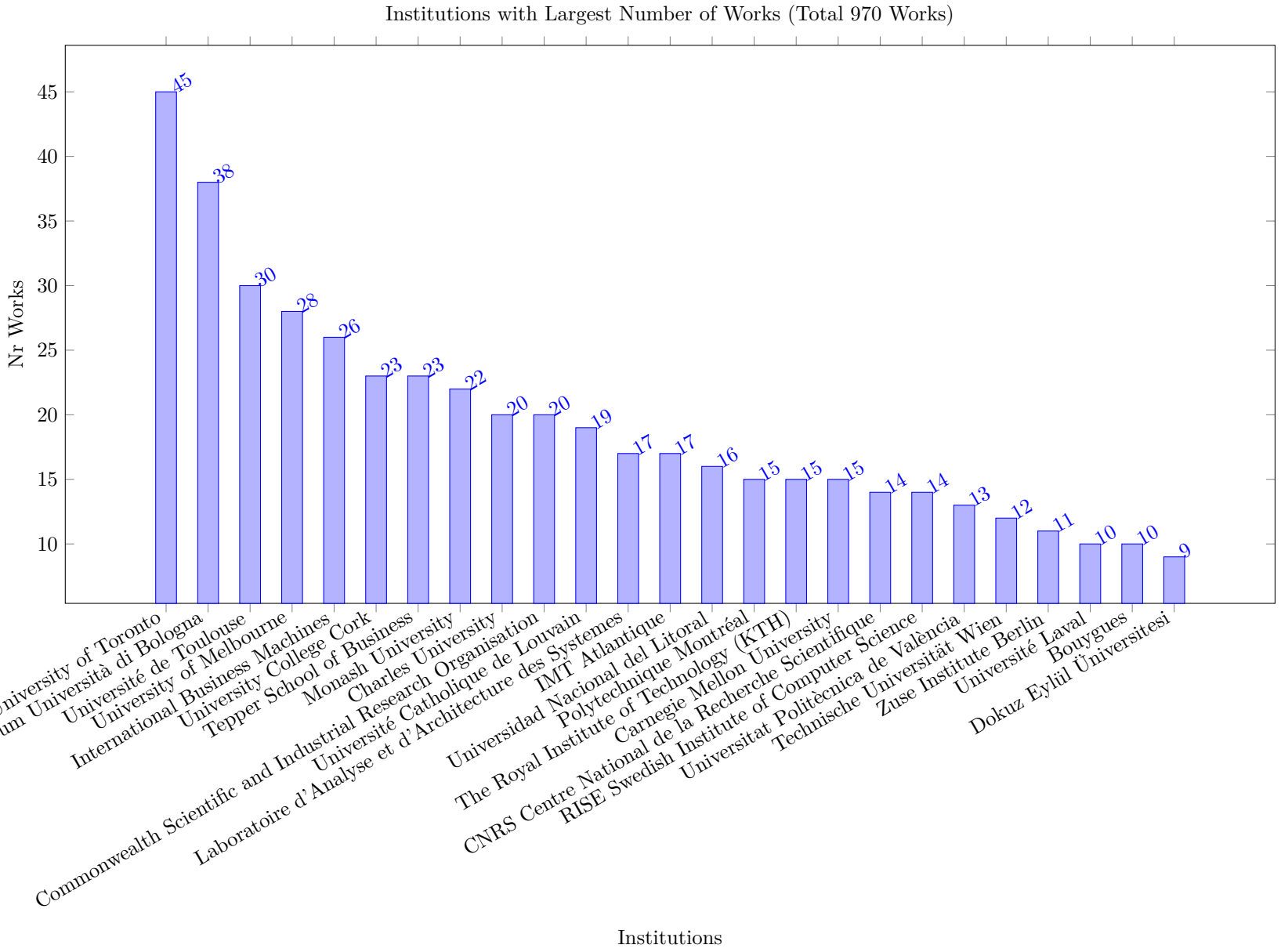
This section analyzes papers by affiliation, which is given by the Scopus data only. Only works which are covered by Scopus are included. We first present the number of papers by country. A paper is counted in this analysis (once), if at least one of the affiliations is from the country. Multiple affiliations 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 970 Works)
Nr Works
0
20
40
60
80
100
120
140
160
180
177
176
101
84
70
66
60
39
37
35
30
29
29
28
28
26
24
21
18
17
16
15
12
12
10
10
9
9
9
9
France
United States
Canada
Germany
China
Australia
Italy
Sweden
United Kingdom
Turkey
Belgium
Austria
Czech Republic
Spain
Ireland
Brazil
Poland
Iran
Netherlands
Argentina
Denmark
Taiwan
Norway
Hungary
Greece
Mexico
Singapore
South Korea
Chile
Hong Kong
Country

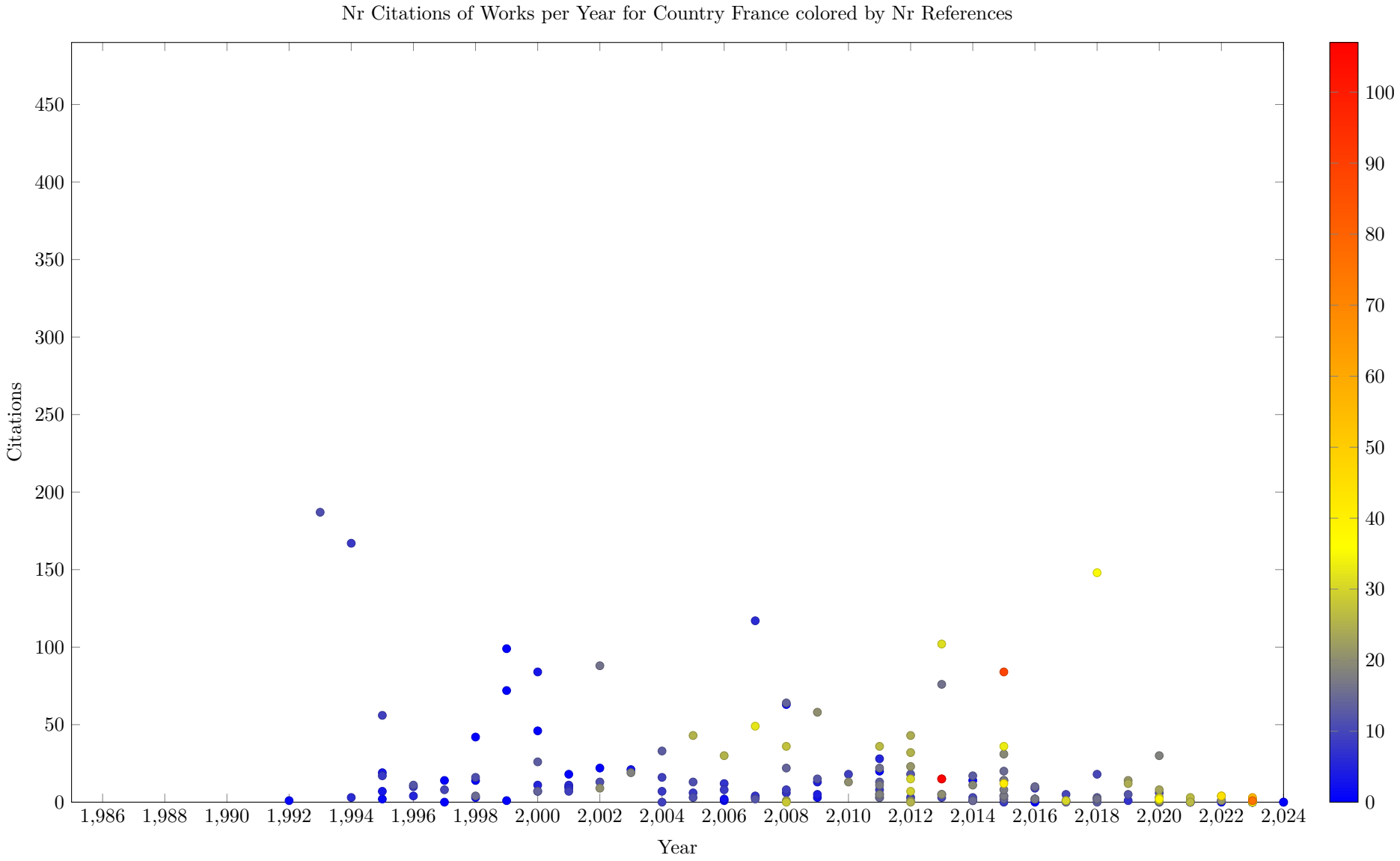


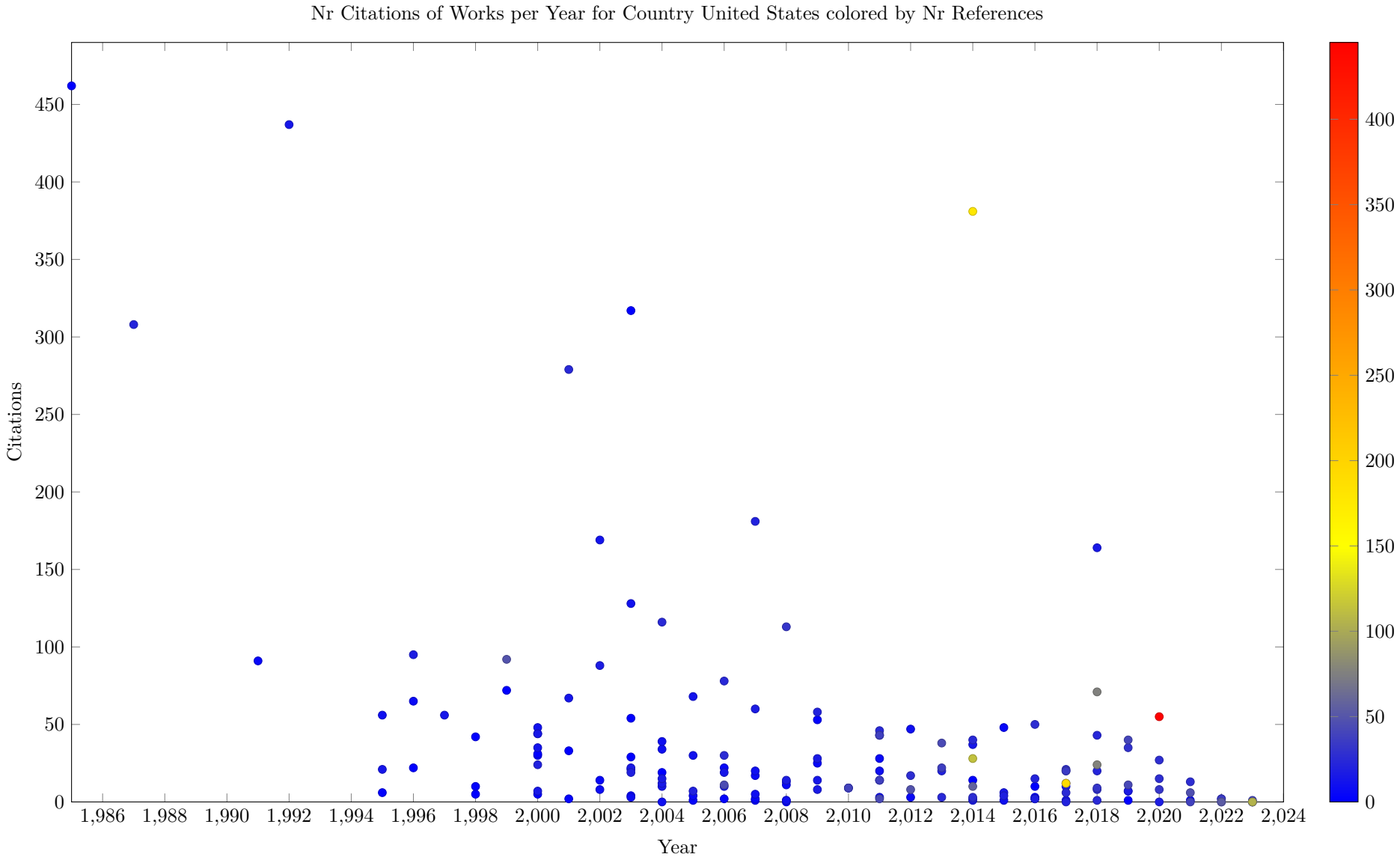
The next plot shows the number of papers associated to institutions, as stated in the Scopus affiliation. A work is counted, if at least one of the affiliations is from a given institution. Due to the format of the Scopus data, we cannot fractionally assign a paper based on the author affiliations, each 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.

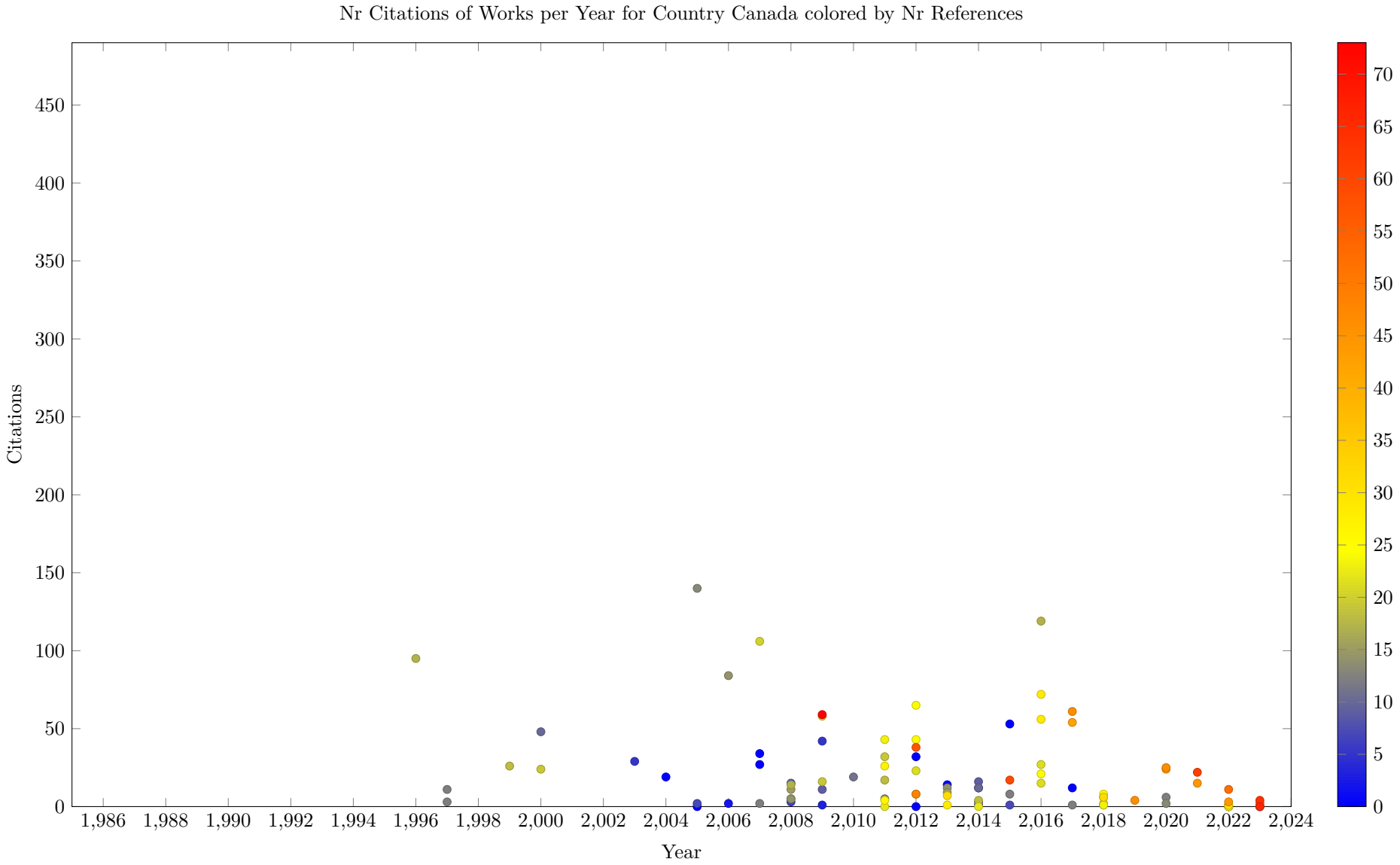

Institutions with Largest Number of Works (Total 970 Works)
Nr Works
Institutions
45
38
30
28
26
23
23
22
20
20
19
17
17
16
15
15
15
14
14
13
12
11
10
10
9
University of Toronto
Alma Mater Studiorum Università di Bologna
Université de Toulouse
University of Melbourne
International Business Machines
University 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

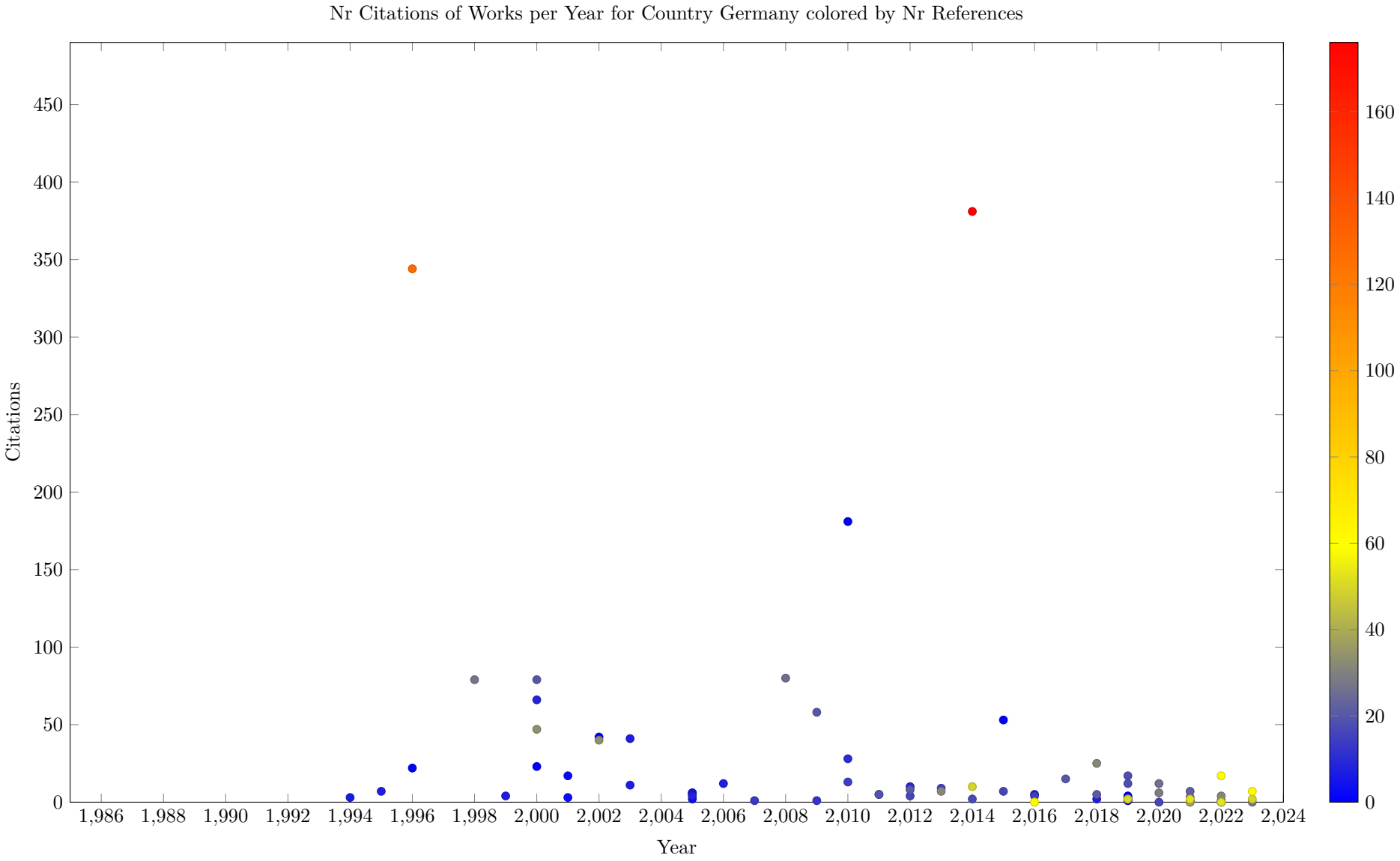
The following plots show for the top 30 countries when the works included were published, and how many citations (OpenCitation count) each paper had. The scatter plots are colored by the number of references (OpenCitation count), this help to identify surveys more easily. The plot gives an indication 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
400
450
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


Nr Citations of Works per Year for Country United States colored by Nr References
Citations
0
50
100
150
200
250
300
350
400
450
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
400
450
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
400
450
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
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2,022
2,024
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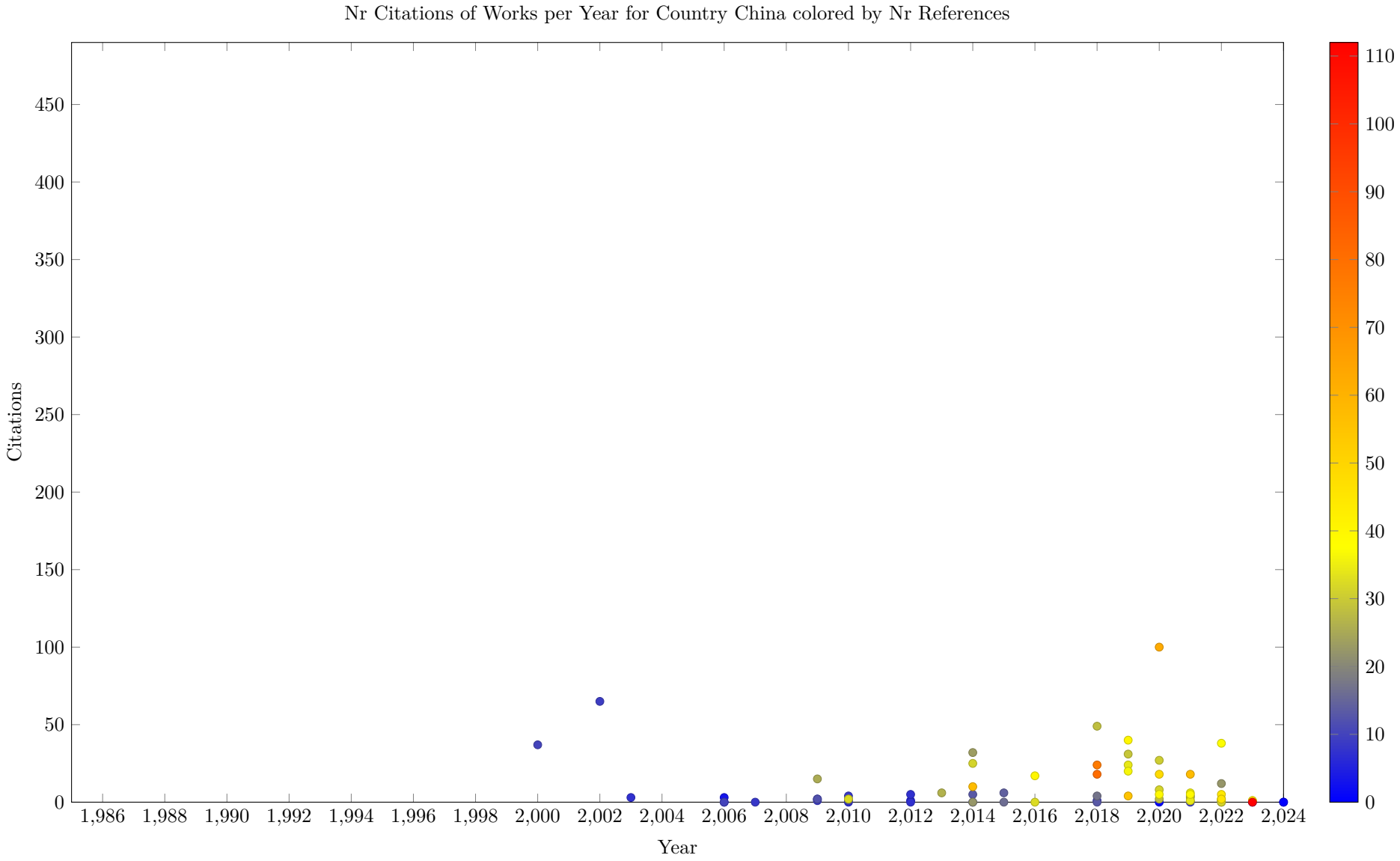
40
60
80
100
120
140
160


Nr Citations of Works per Year for Country China colored by Nr References
Citations
0
50
100
150
200
250
300
350
400
450
Year
1,986
1,988
1,990
1,992
1,994
1,996
1,998
2,000
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2,012
2,014
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2,020
2,022
2,024
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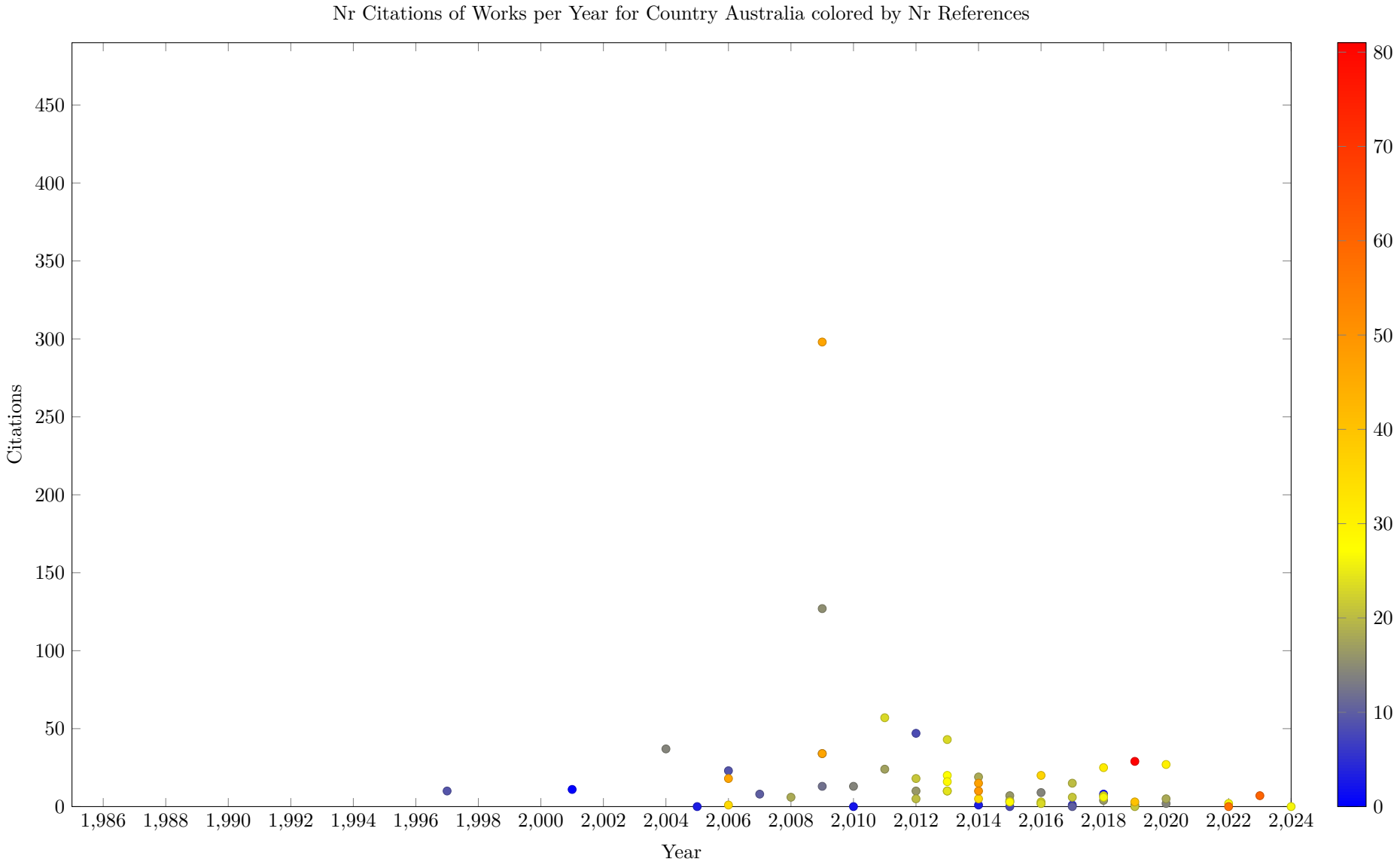
70
80
90
100
110


Nr Citations of Works per Year for Country Australia colored by Nr References
Citations
0
50
100
150
200
250
300
350
400
450
Year
1,986
1,988
1,990
1,992
1,994
1,996
1,998
2,000
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2,008
2,010
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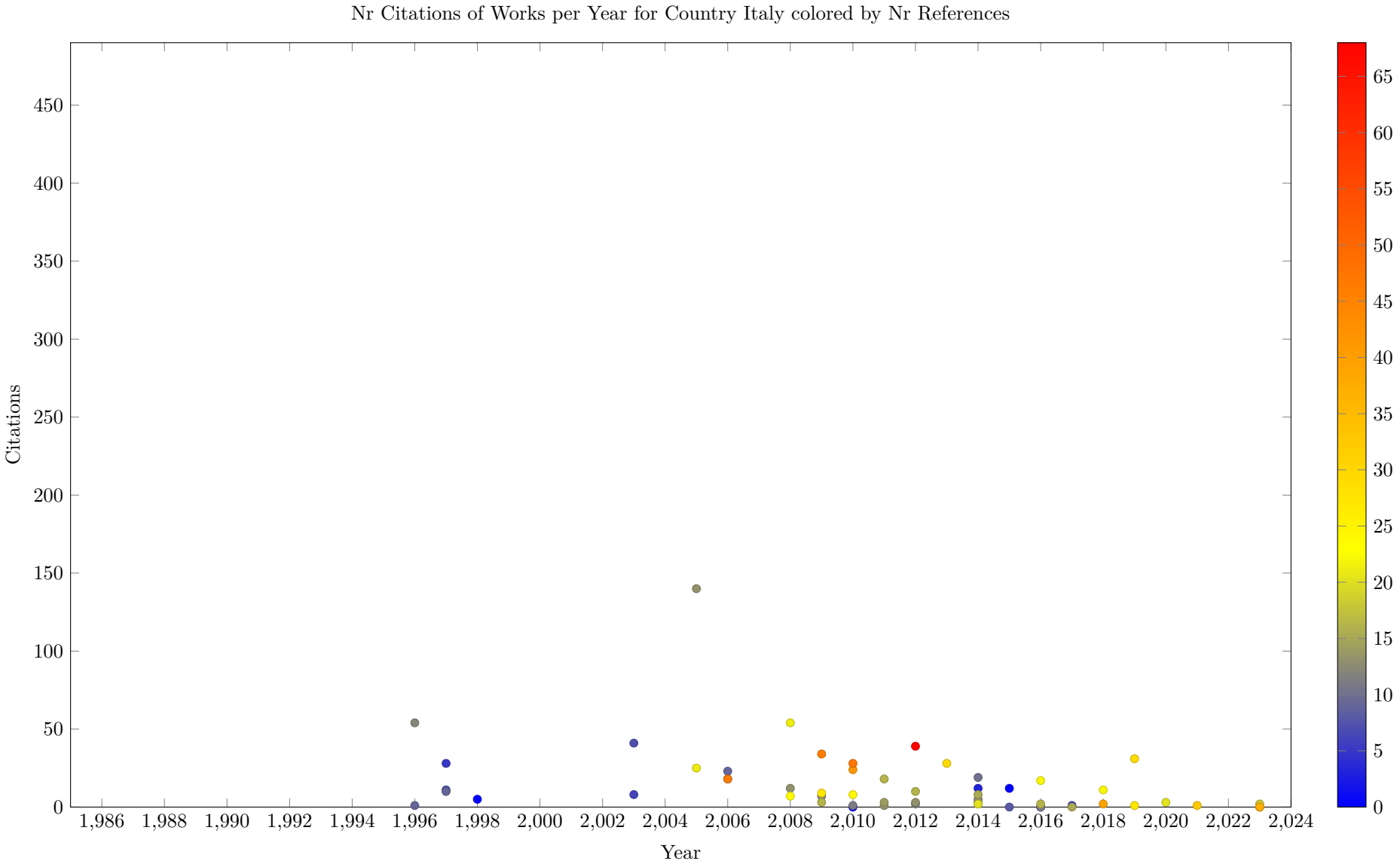
40
50
60
70
80


Nr Citations of Works per Year for Country Italy colored by Nr References
Citations
0
50
100
150
200
250
300
350
400
450
Year
1,986
1,988
1,990
1,992
1,994
1,996
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2,000
2,002
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2,008
2,010
2,012
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2,024
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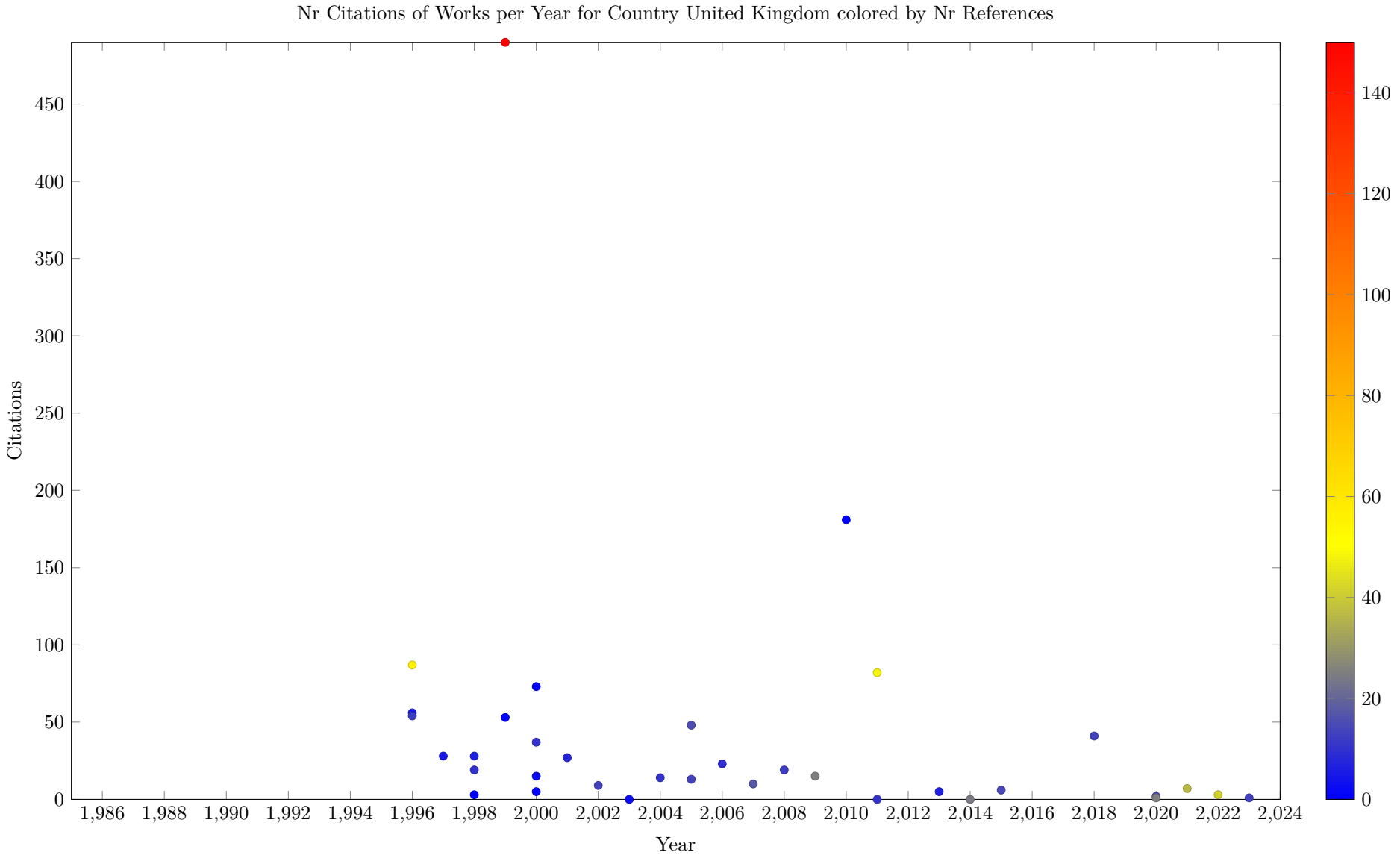
65


Nr Citations of Works per Year for Country United Kingdom colored by Nr References
Citations
0
50
100
150
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250
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350
400
450
Year
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1,988
1,990
1,992
1,994
1,996
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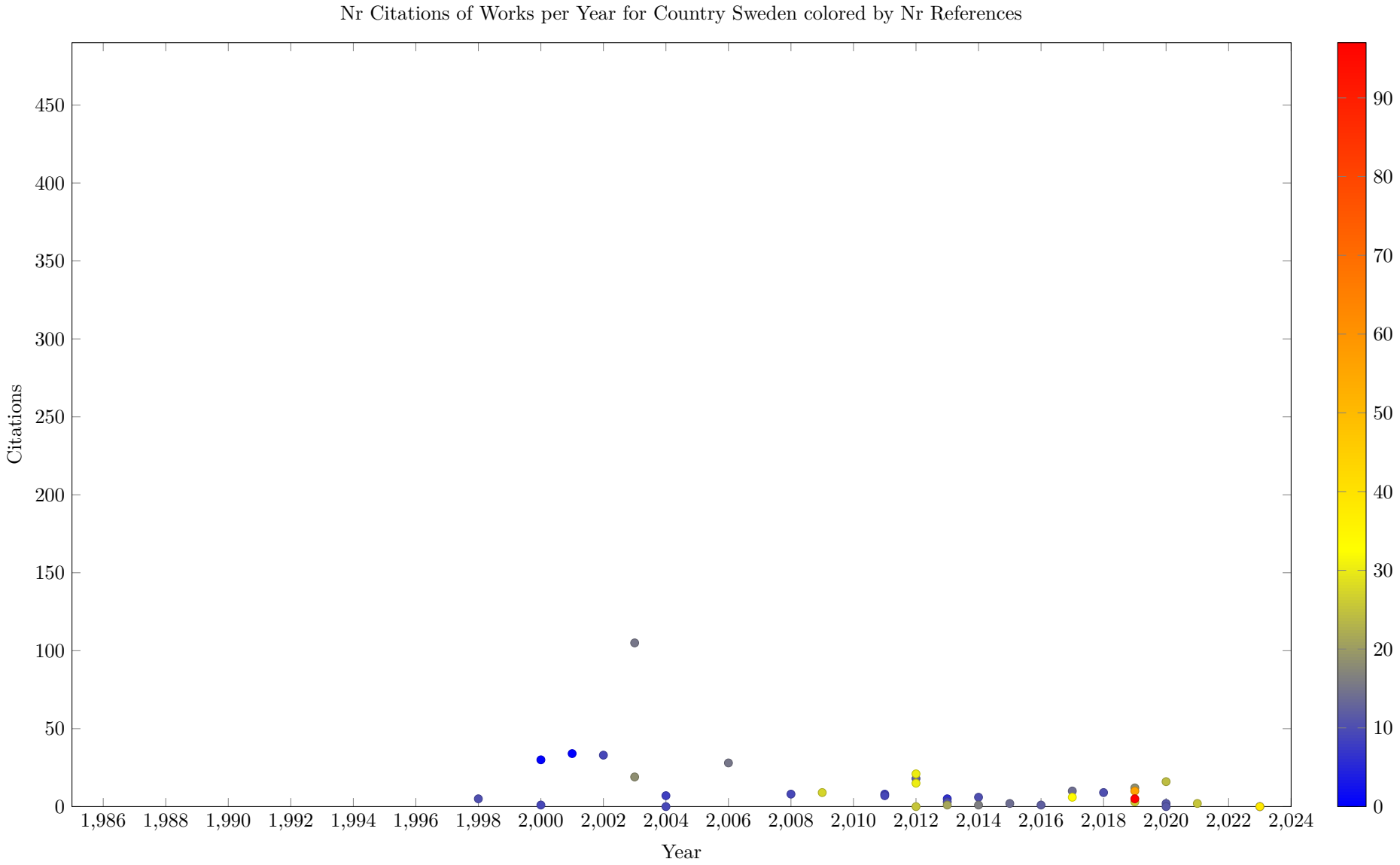
100
120
140


Nr Citations of Works per Year for Country Sweden colored by Nr References
Citations
0
50
100
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Year
1,986
1,988
1,990
1,992
1,994
1,996
1,998
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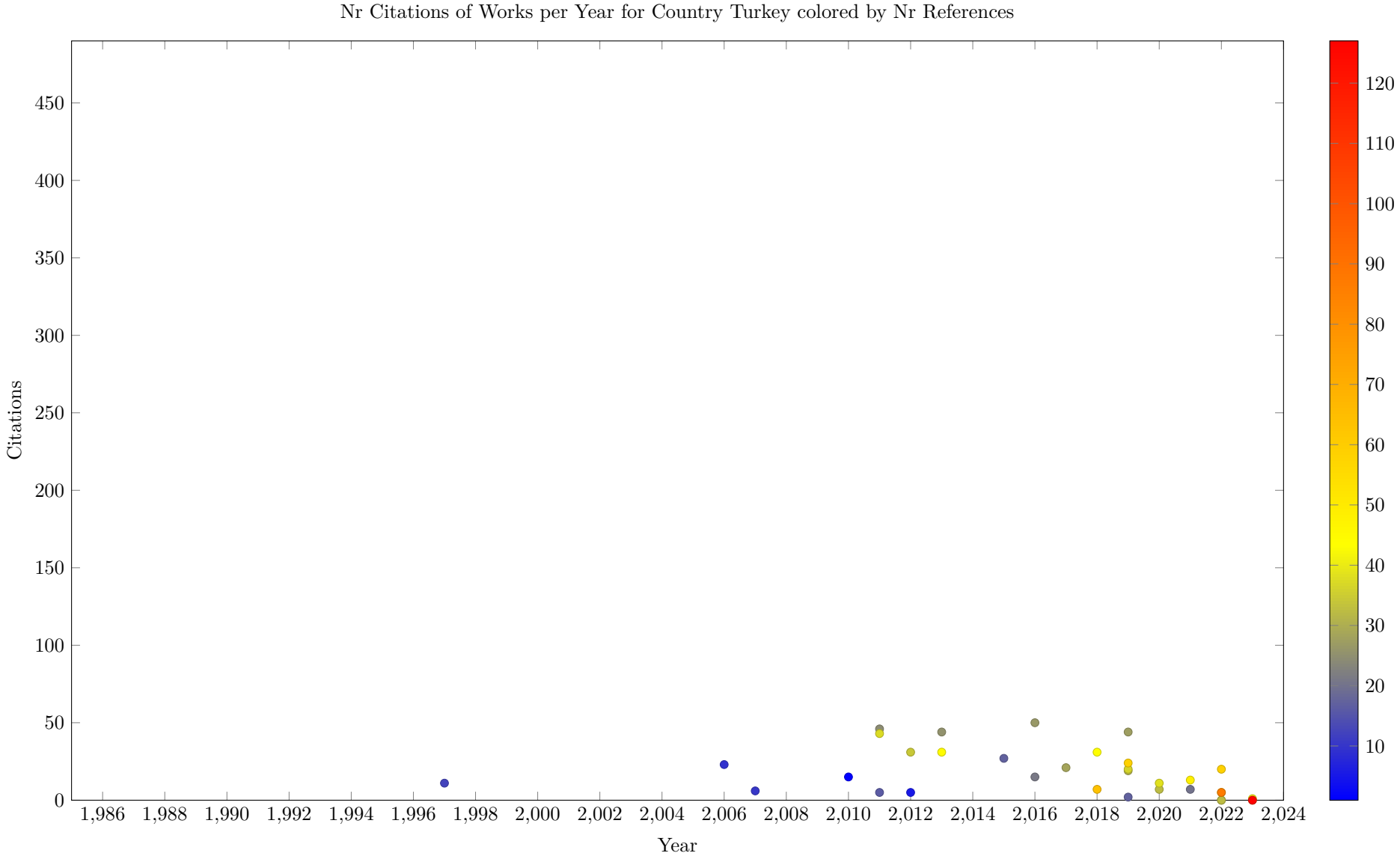
Nr Citations of Works per Year for Country Turkey colored by Nr References
Citations
0
50
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Year
1,986
1,988
1,990
1,992
1,994
1,996
1,998
2,000
2,002
2,004
2,006
2,008
2,010
2,012
2,014
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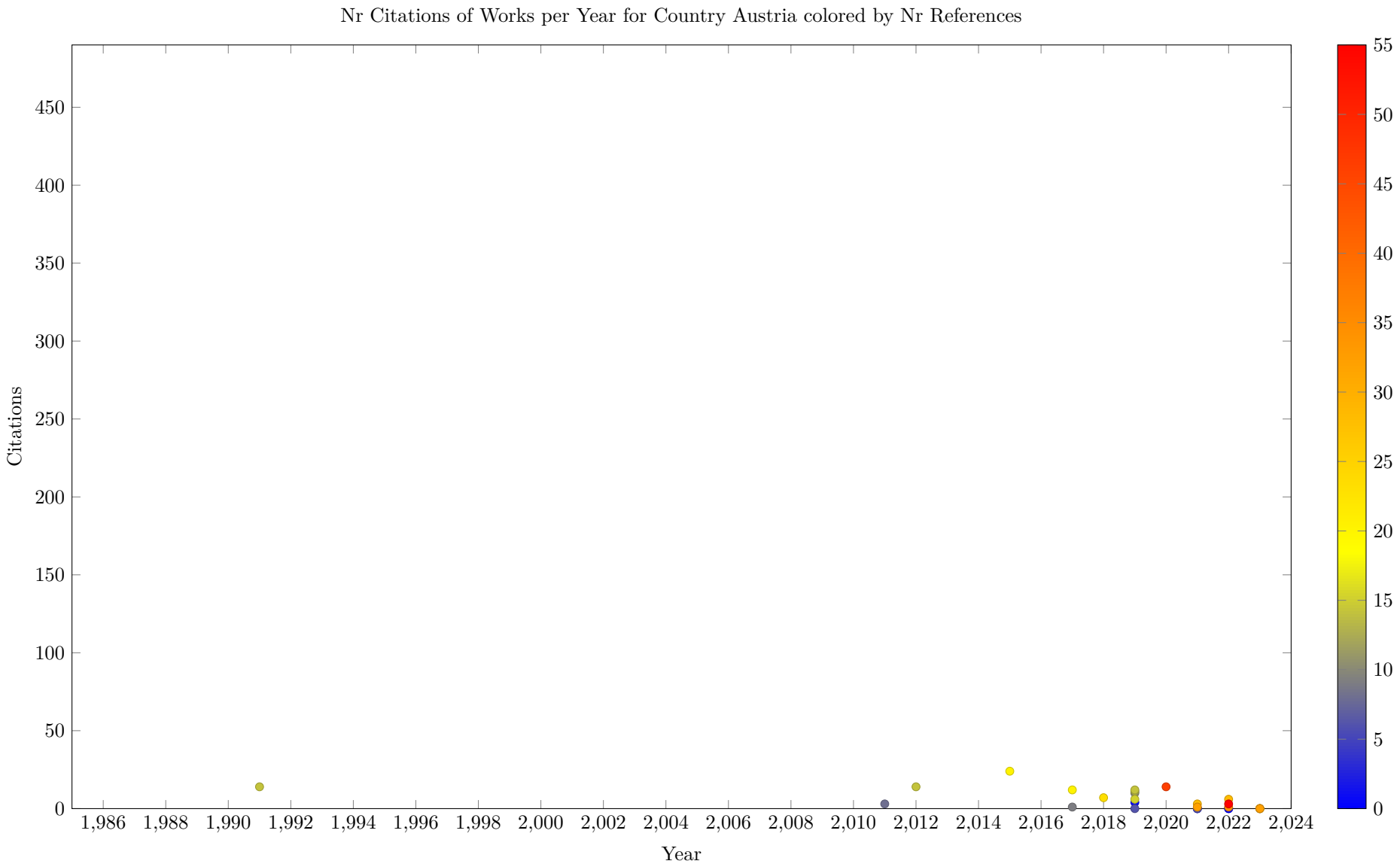
120


Nr Citations of Works per Year for Country Austria colored by Nr References
Citations
0
50
100
150
200
250
300
350
400
450
Year
1,986
1,988
1,990
1,992
1,994
1,996
1,998
2,000
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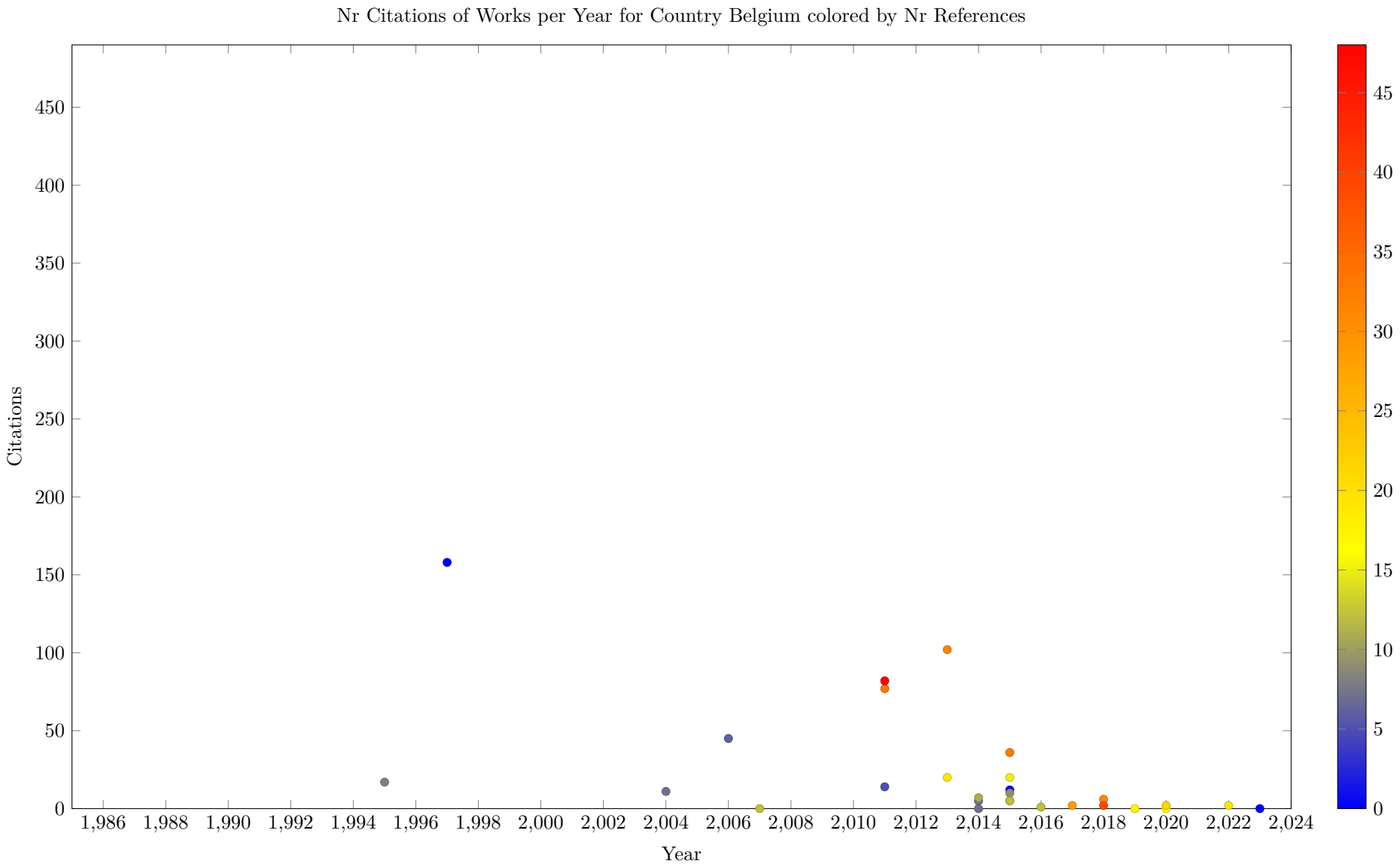
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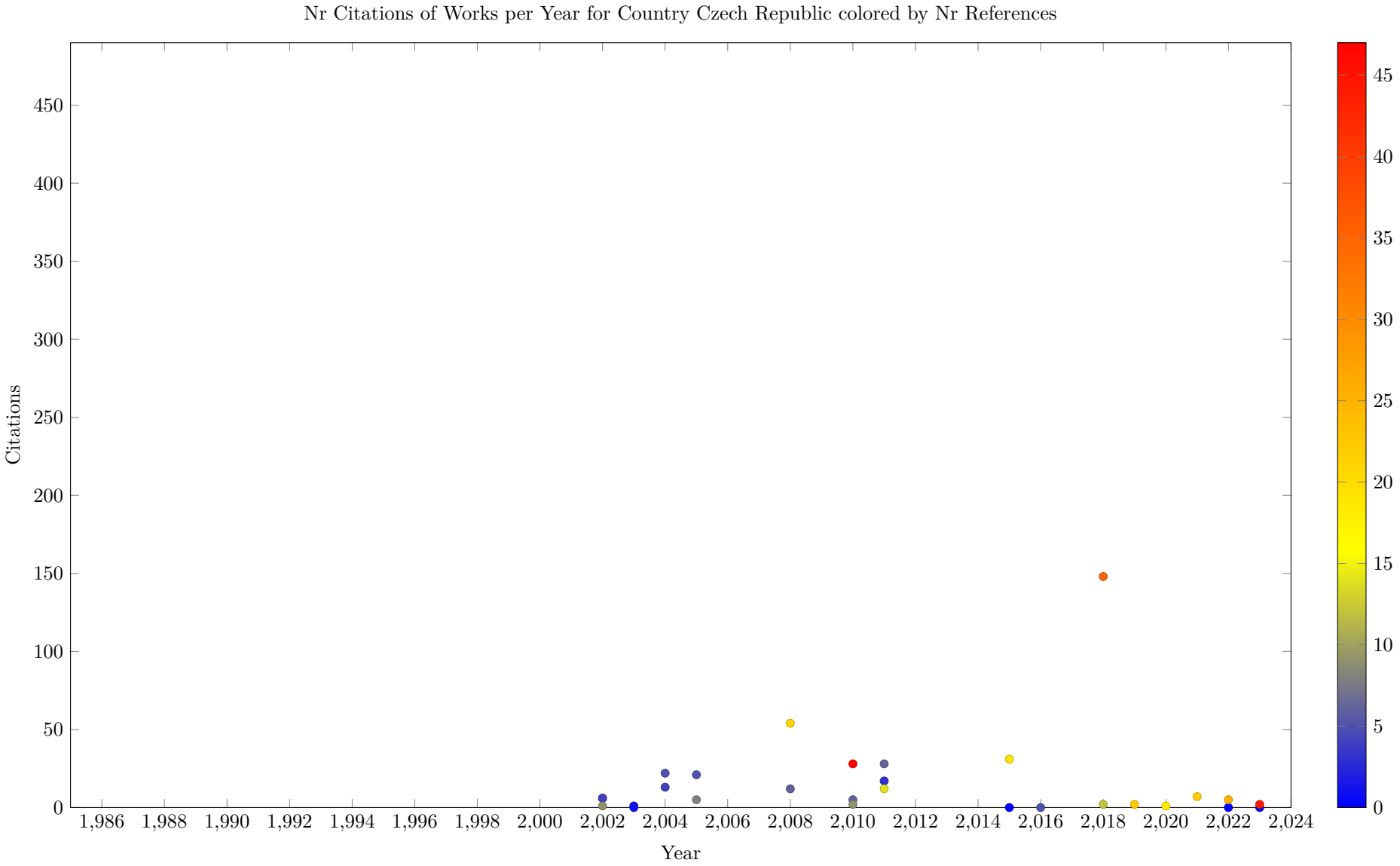
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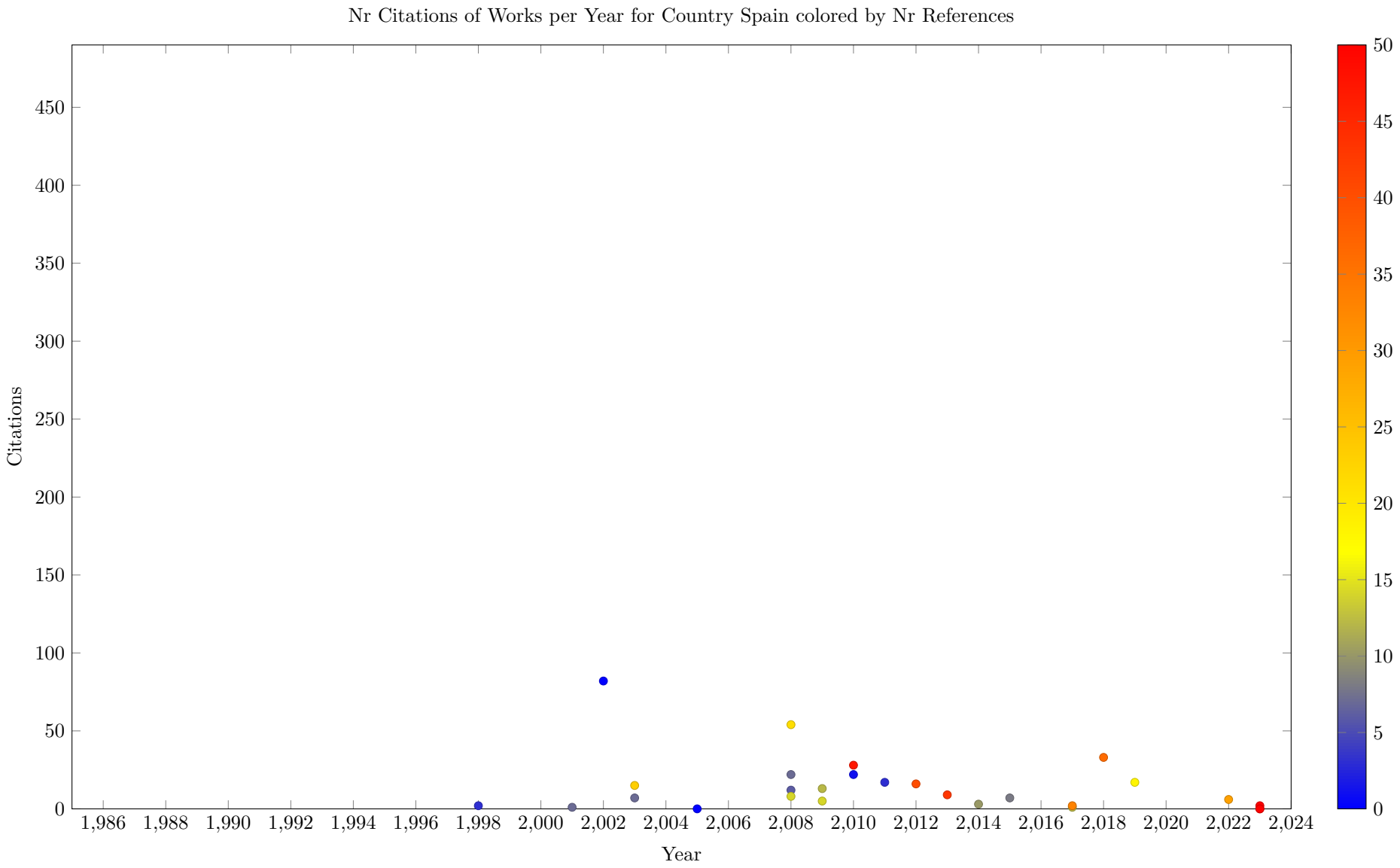
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Nr Citations of Works per Year for Country Ireland colored by Nr References
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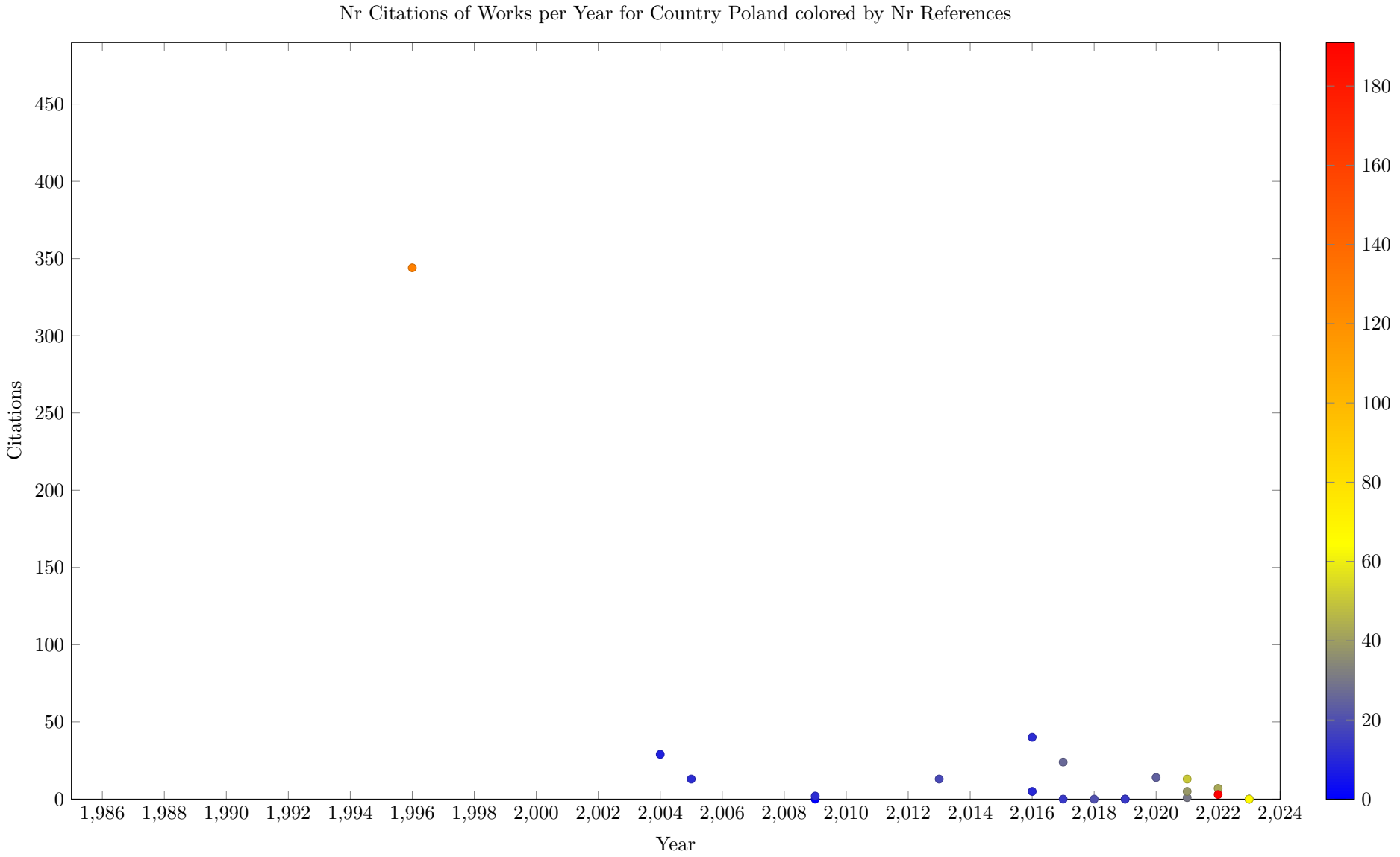
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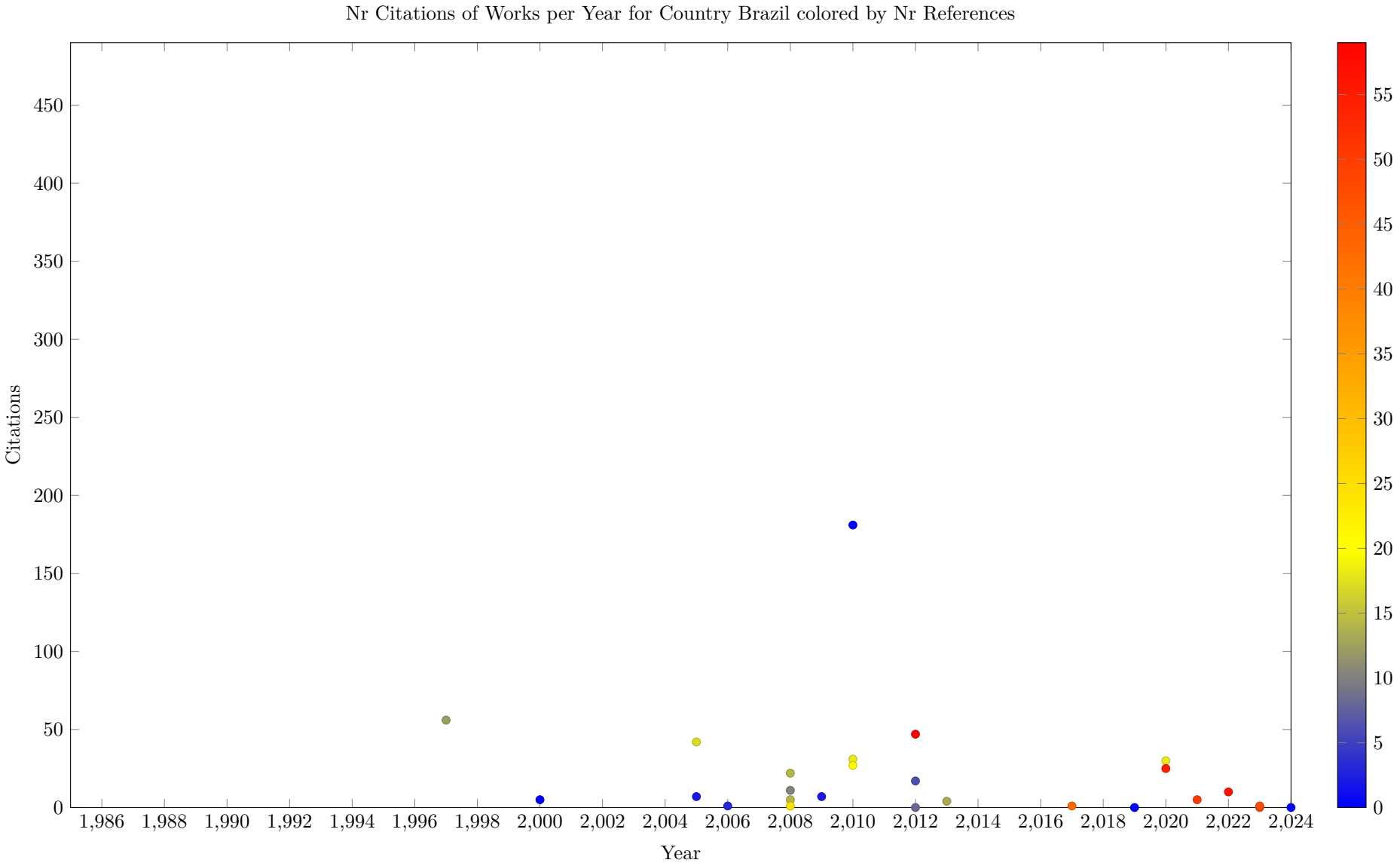
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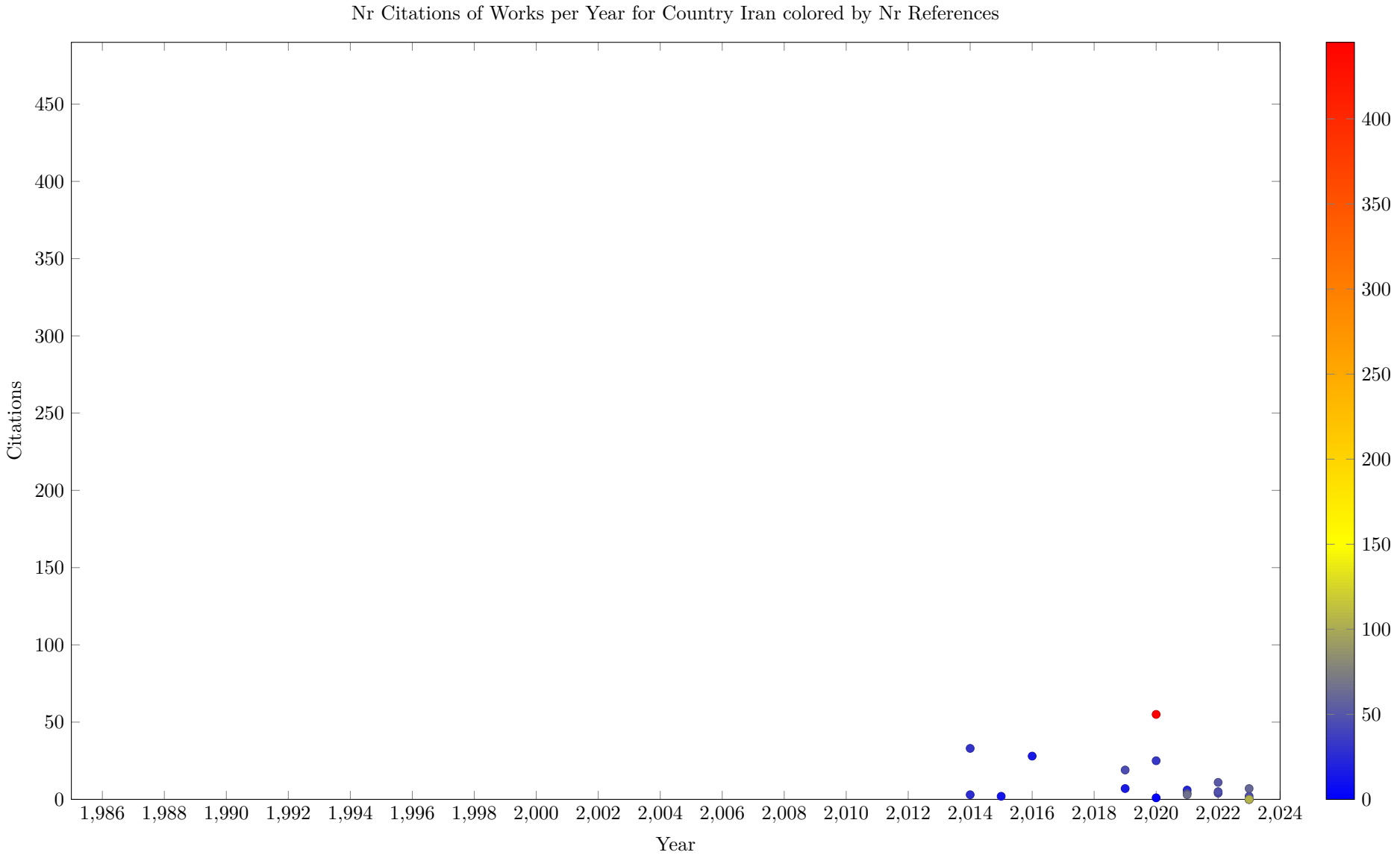
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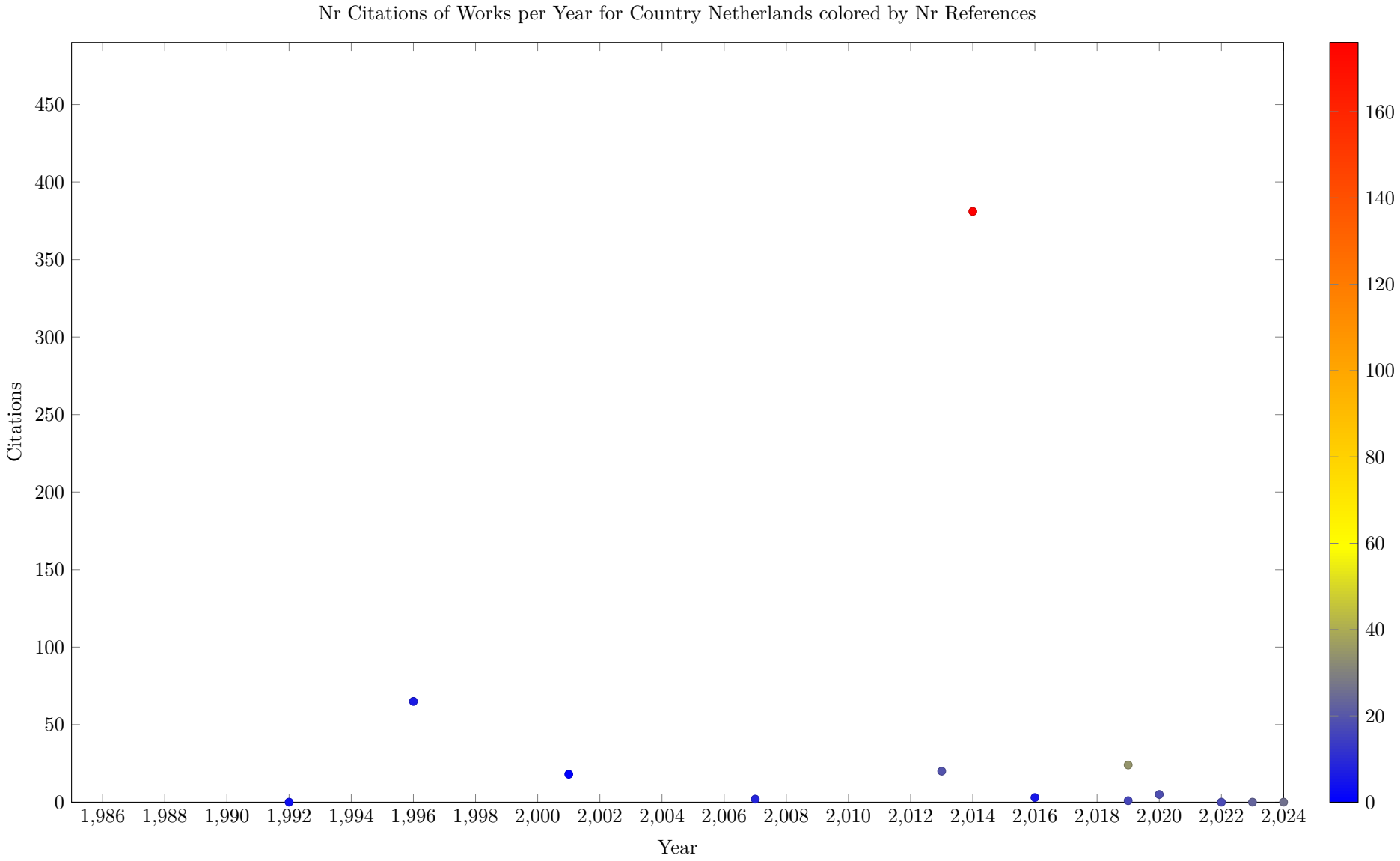
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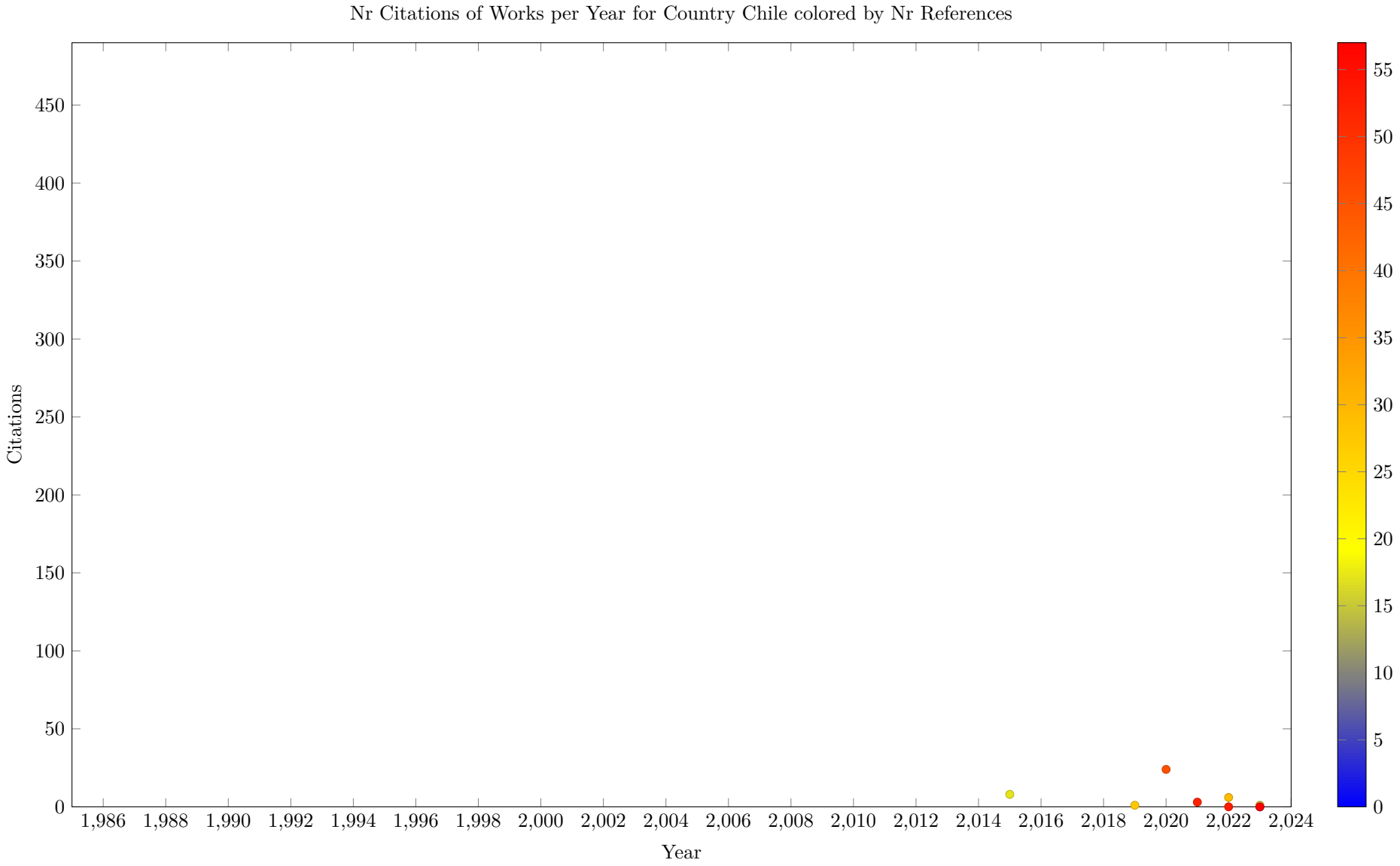
Nr Citations of Works per Year for Country Chile colored by Nr References
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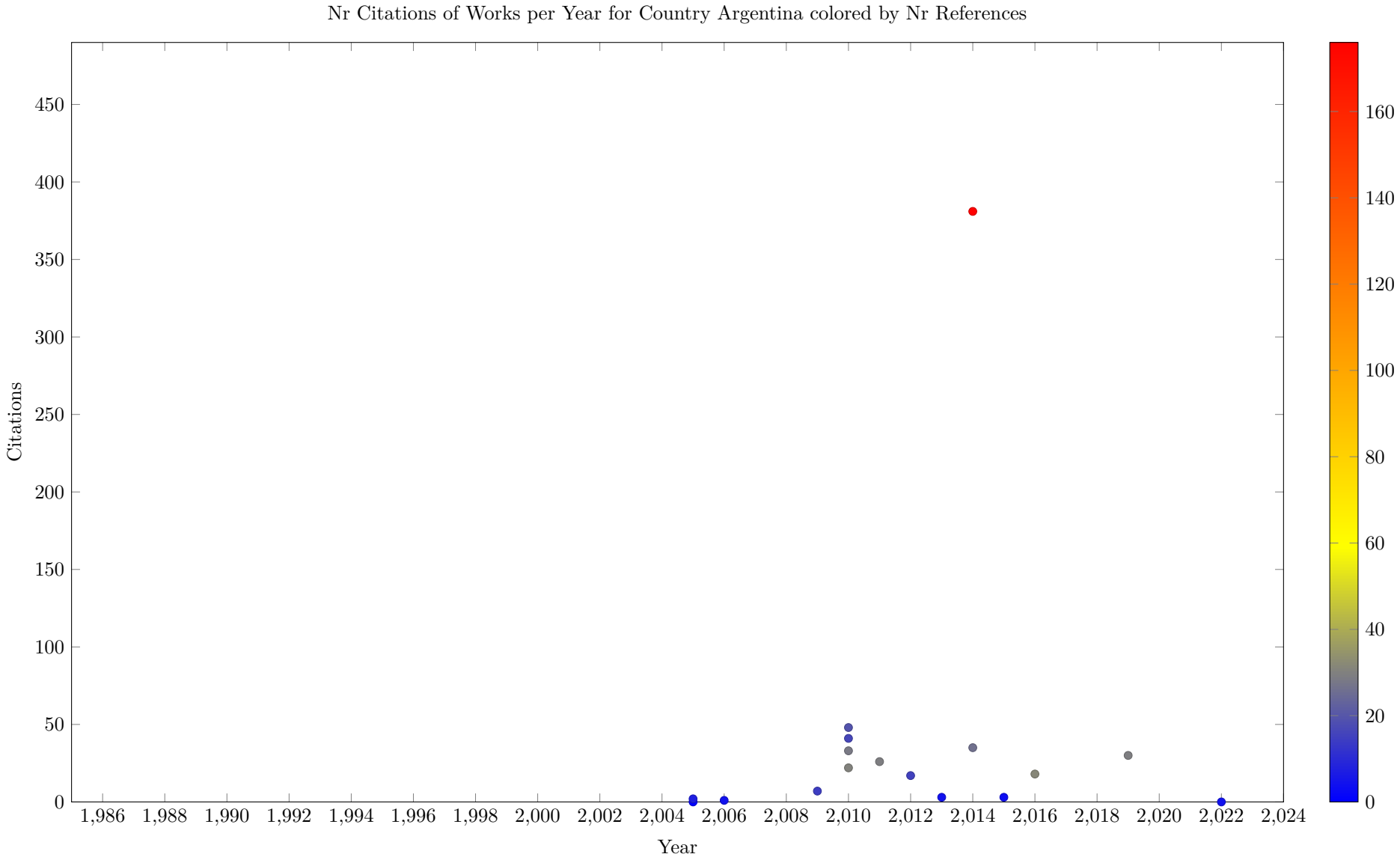
Nr Citations of Works per Year for Country Argentina colored by Nr References
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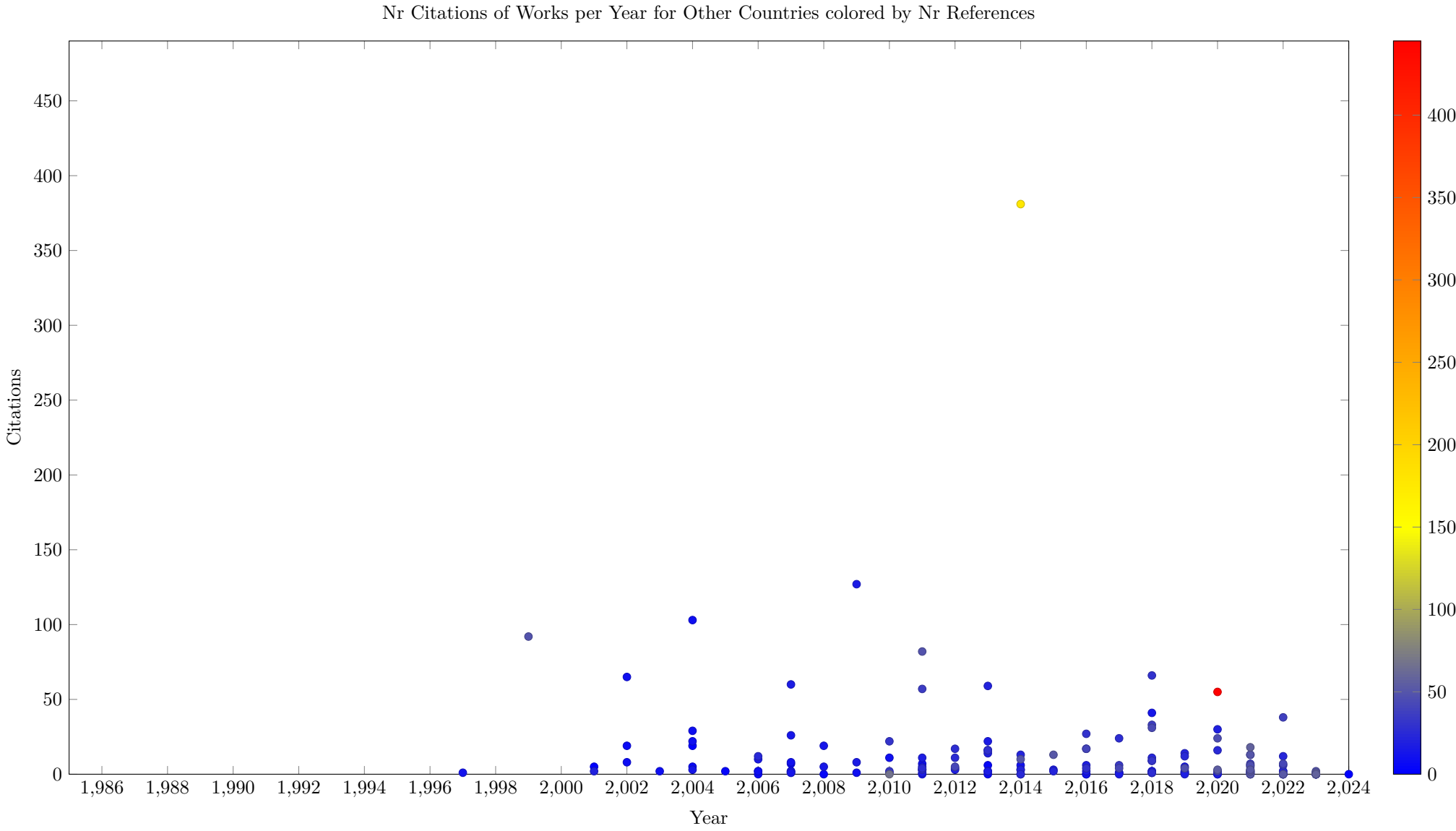
Nr Citations of Works per Year for Other Countries colored by Nr References
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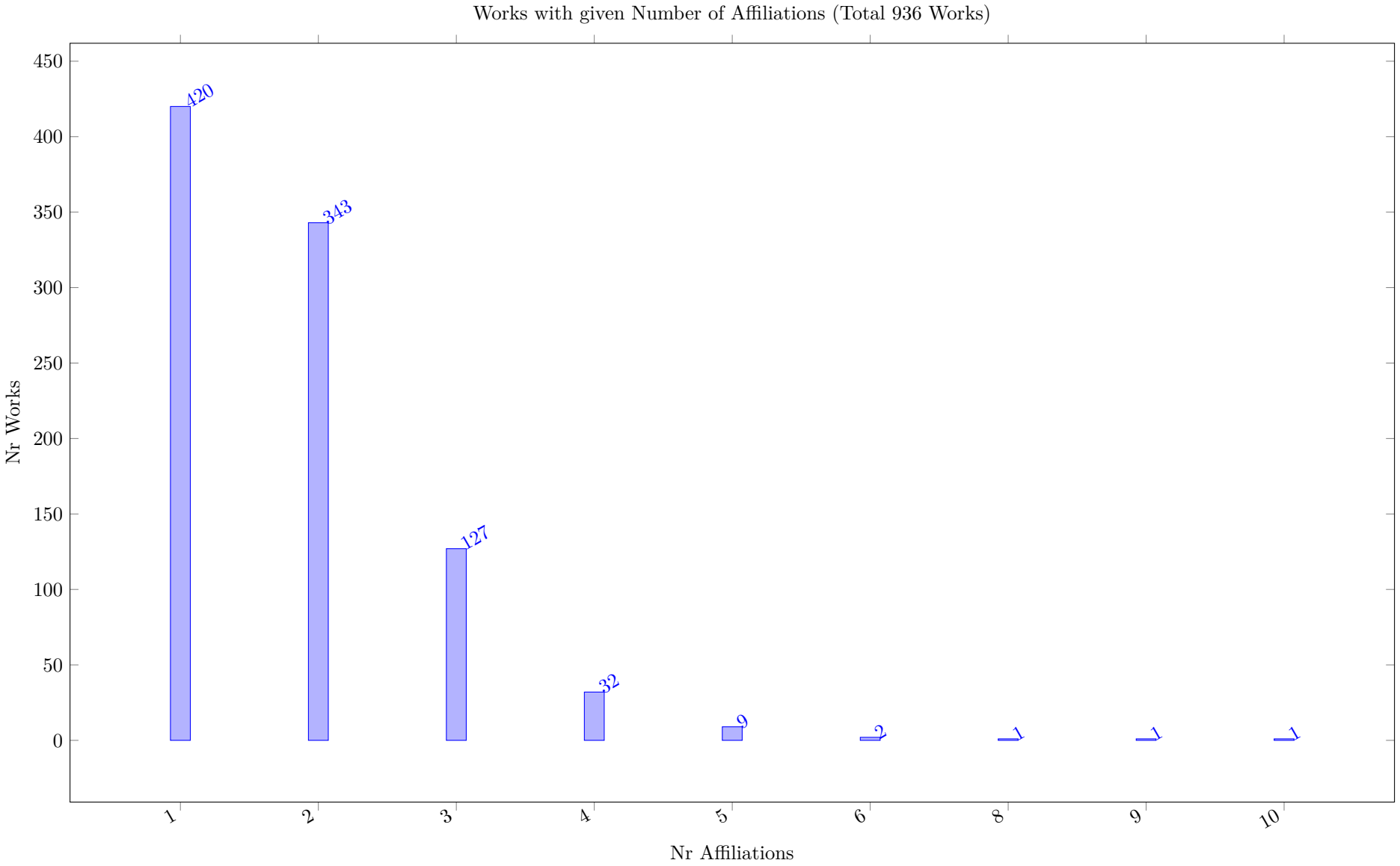
4 Collaborations

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 936 Works)
Nr Works
Nr Affiliations
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420
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127
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6
8
9
10

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
The Royal Institute of Technology (KTH), Stockholm, Sweden	15	25	18	7	14.00	10.67	3.33	93.33	22.22
IMT Atlantique, Nantes, France	17	15	5	10	13.00	4.00	9.00	76.47	52.94
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
Université Catholique de Louvain, Louvain-la-Neuve, Belgium	19	12	2	10	9.00	1.33	7.67	47.37	40.35
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
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
University of Windsor, Windsor, Canada	6	13	11	2	6.00	5.17	0.83	100.00	13.89
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
Universidad Nacional del Litoral, Santa Fe, Argentina	16	14	4	10	6.00	4.00	2.00	37.50	12.50
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
Université Laval, Quebec, Canada	10	10	3	7	5.00	2.00	3.00	50.00	30.00
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
École des Mines de Saint-Étienne, Saint-Etienne, France	5	12	8	4	5.00	4.00	1.00	100.00	20.00
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
Technische Universität Berlin, Berlin, Germany	6	13	5	8	5.00	3.50	1.50	83.33	25.00

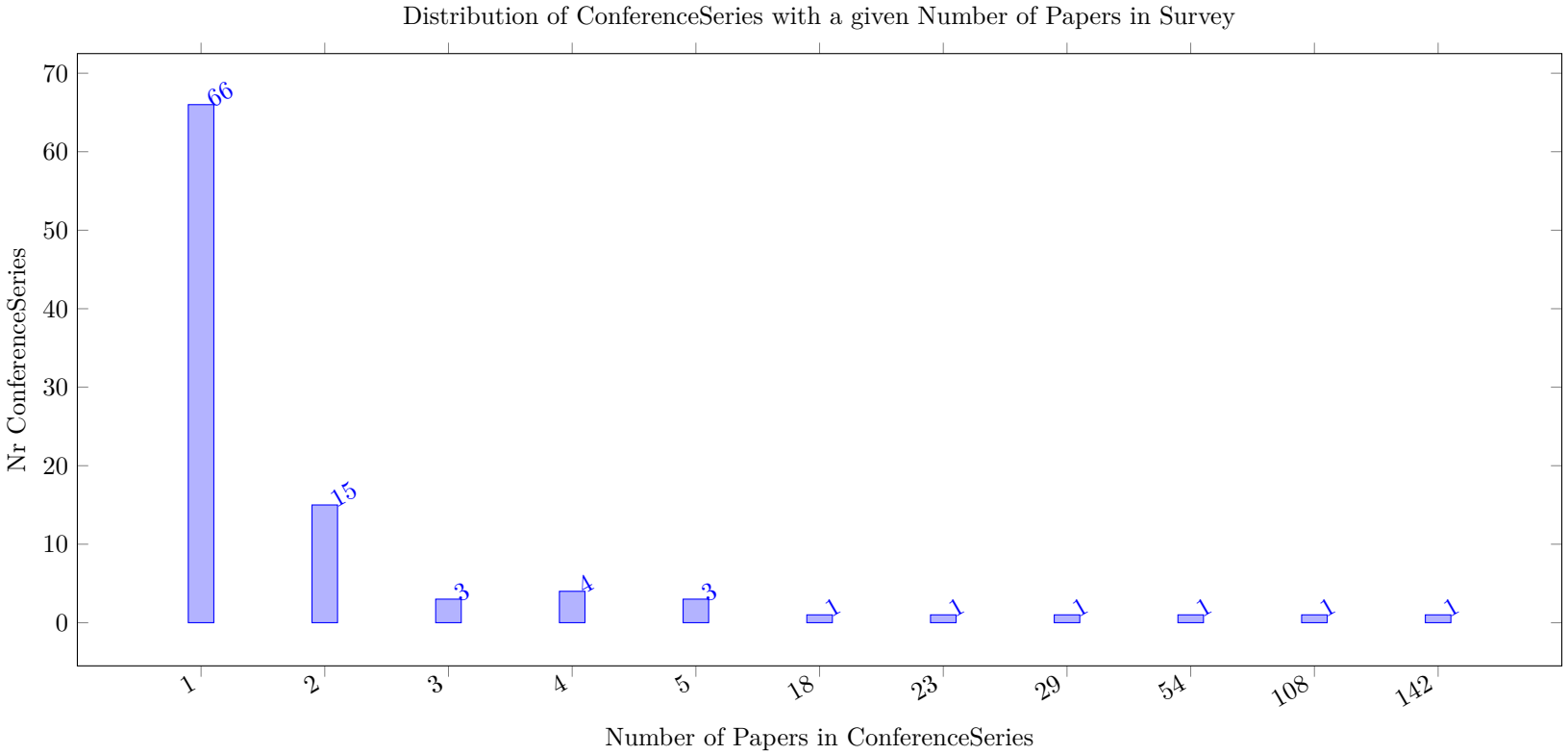
Table 9: Heat Map based on Collaboration between Countries (Fractional Count)

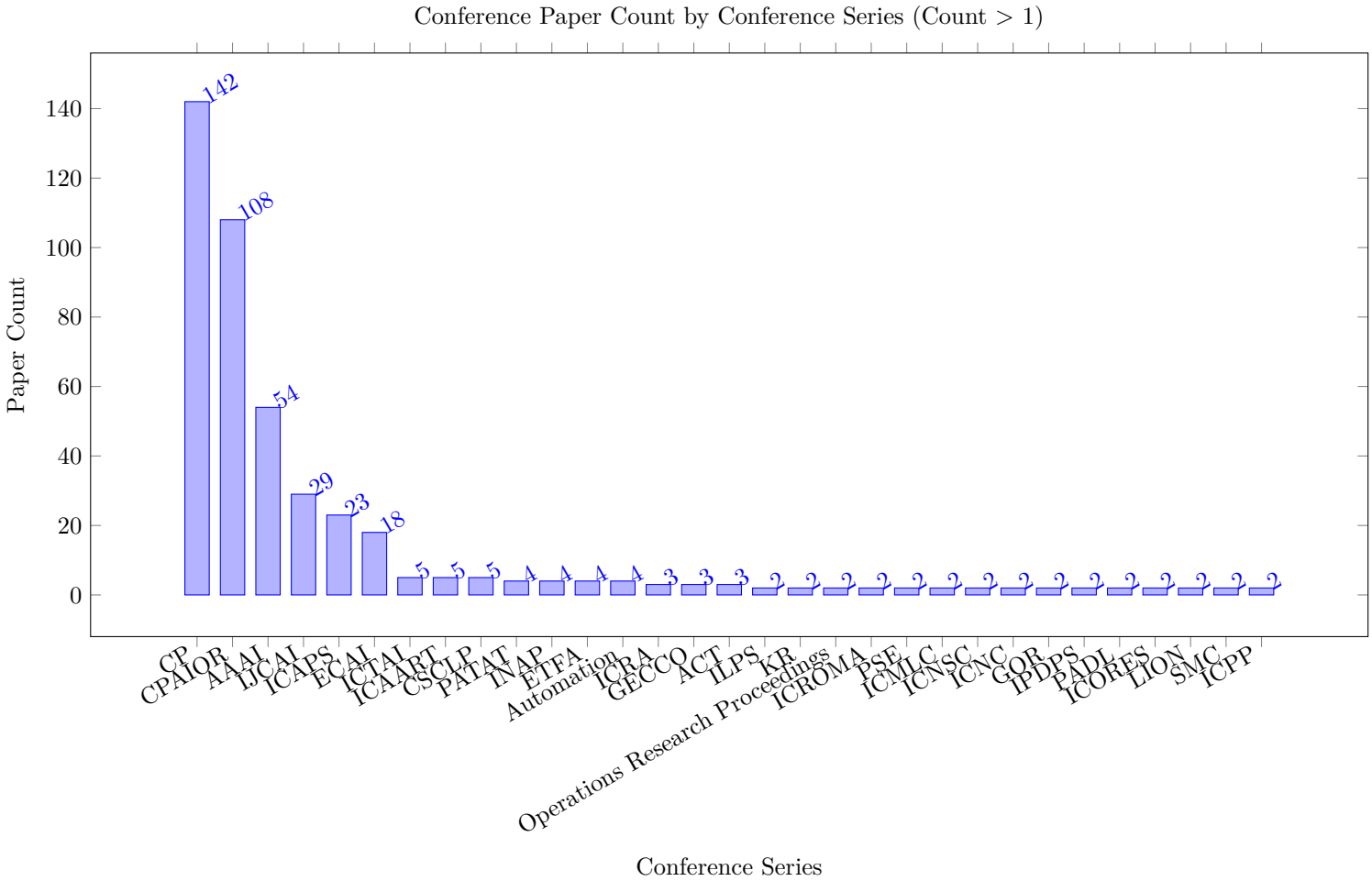
From/To	Total	France	United States	Canada	China	Australia	Germany	Sweden	Italy	Turkey	Austria	United Kingdom	Ireland	Poland	Czech Republic	Chile	Belgium	Spain	Brazil	Iran	Denmark	Taiwan	Norway	Singapore	South Korea	Cameroon	Other
Total	204.00	140.33	73.69	61.00	62.00	55.67	33.22	26.67	12.67	24.67	27.00	9.00	6.38	17.00	13.00	13.20	5.03	9.40	12.67	7.00	4.00	8.00	4.00	4.67	4.00	8.00	10.00
France	204.00	140.33	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	2.58	0.00	0.00	0.00	8.25
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	1.00	4.00
China	89.00	2.00	6.67	1.00	62.00	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	0.00	5.83	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	0.33	0.00	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	1.00	0.00	0.00	2.00	2.00
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	0.83	0.00	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	31.00	0.00	0.00	0.00	0.00	1.00	2.00	0.00	1.00	0.00	27.00	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	0.50	0.00	0.00	0.00	5.00
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	1.00	2.60
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	0.50	0.00	0.00	0.00	5.00
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	4.00	0.00	0.00	0.00	3.25
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	0.00	4.67	0.00	0.00	2.50
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
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	8.00	0.00
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	0.25	0.00	0.00	0.00	10.00
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
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
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
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
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	0.00	2.00	0.00	0.00	0.00
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
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	3.00	0.00	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
Russian Federation	4.00	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	0.00	0.00	3.00
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
Other		1.00	2.61	0.00	1.50	1.00	3.22	0.00	0.00	0.00	0.00	1.50	0.50	2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	1.83	0.00	

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	Netherlands	Spain	Poland	Switzerland	China	Hong Kong	Ireland	Austria	Finland	Macao	Peru	Cyprus	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	5.00	1.00	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	2.00	1.00	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	1.00	2.00	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	1.00	3.00	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	3.00	2.00	1.00	1.00	1.00	2.00	1.00	2.00	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	2.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	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
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	0.00	1.00	2.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	2.00
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	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	8.00
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	2.00	1.00	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	1.00	0.00	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
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	0.00	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	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	0.00	4.00	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	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	5.00
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
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	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	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
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
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	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	2.00
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
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
Colombia	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	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.00
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
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	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	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
Other		4.00	3.00	4.00	3.00	0.00	1.00	3.00	2.00	2.00	0.00	0.00	1.00	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	

5 Conference Papers by Most Common Conference Series

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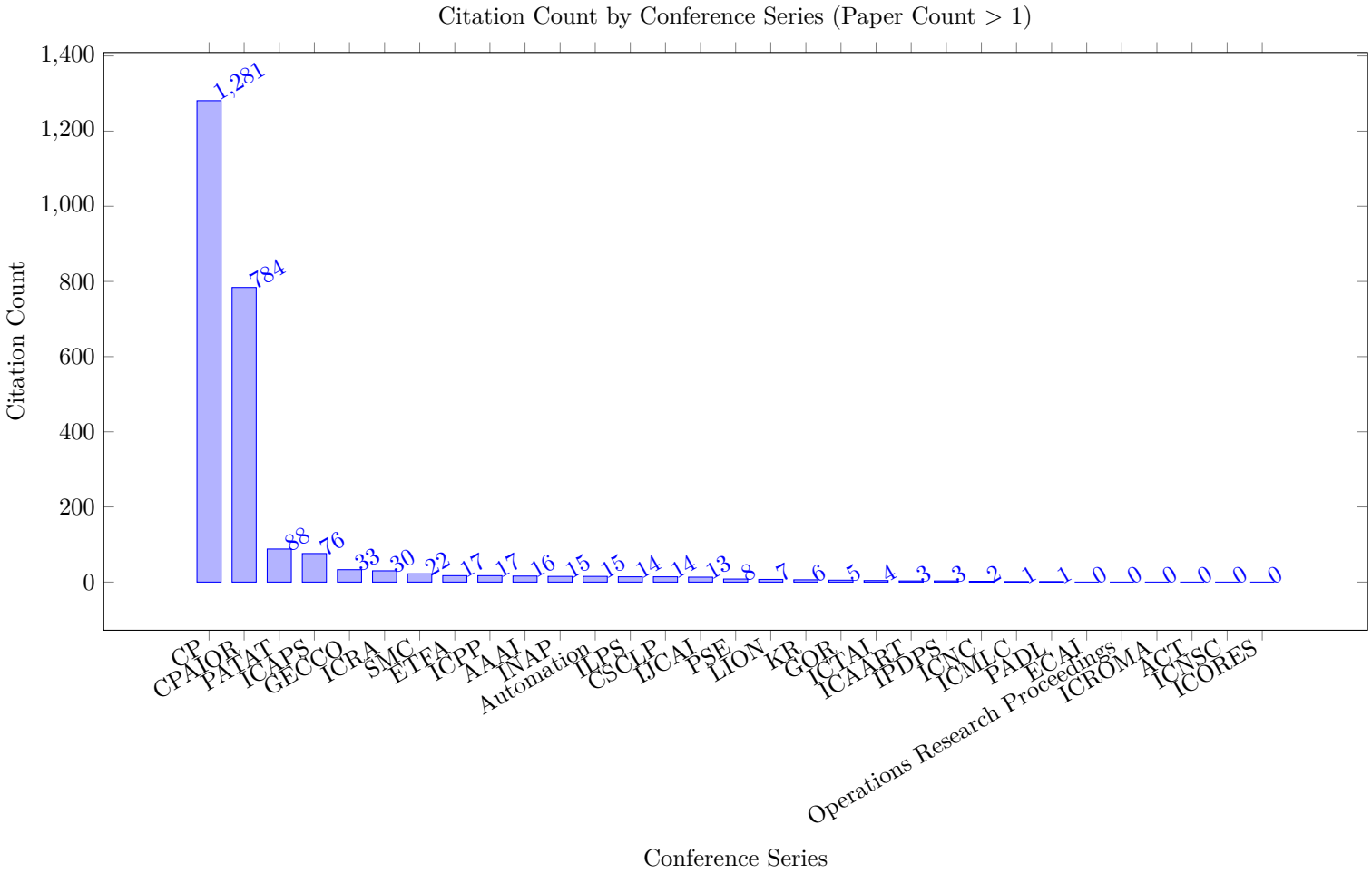
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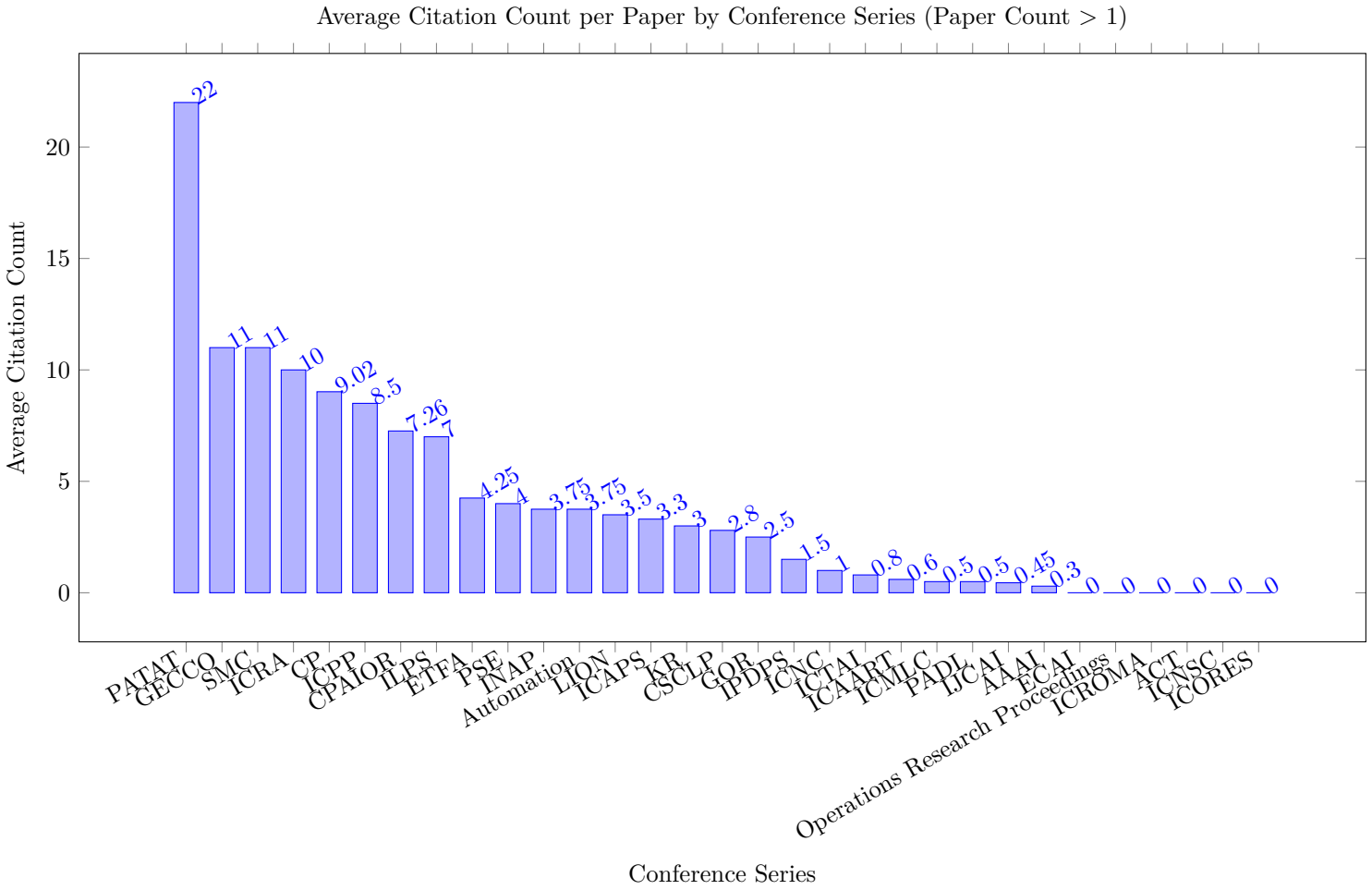
ICROMA
ACT
ICNSC
ICORES
Conference Series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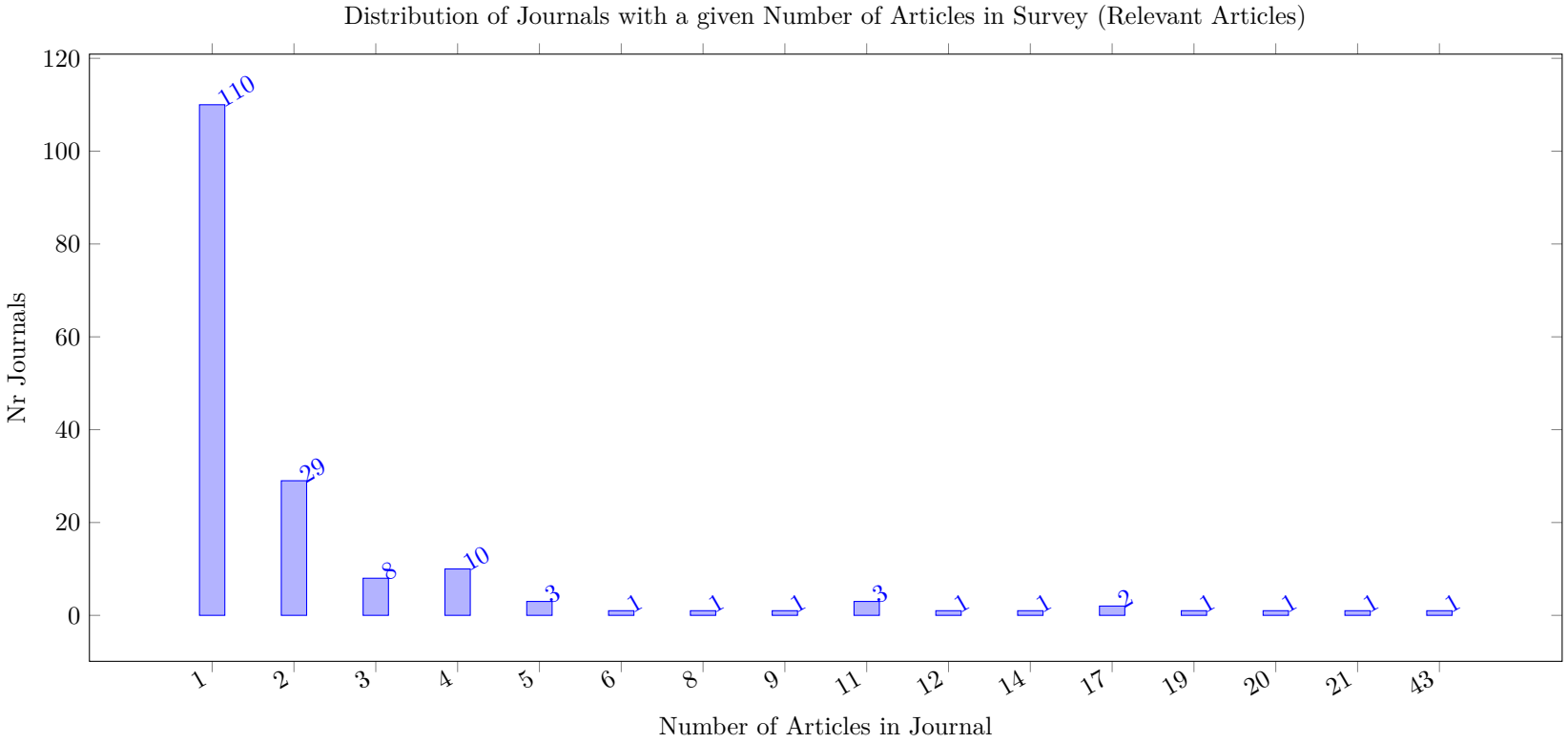
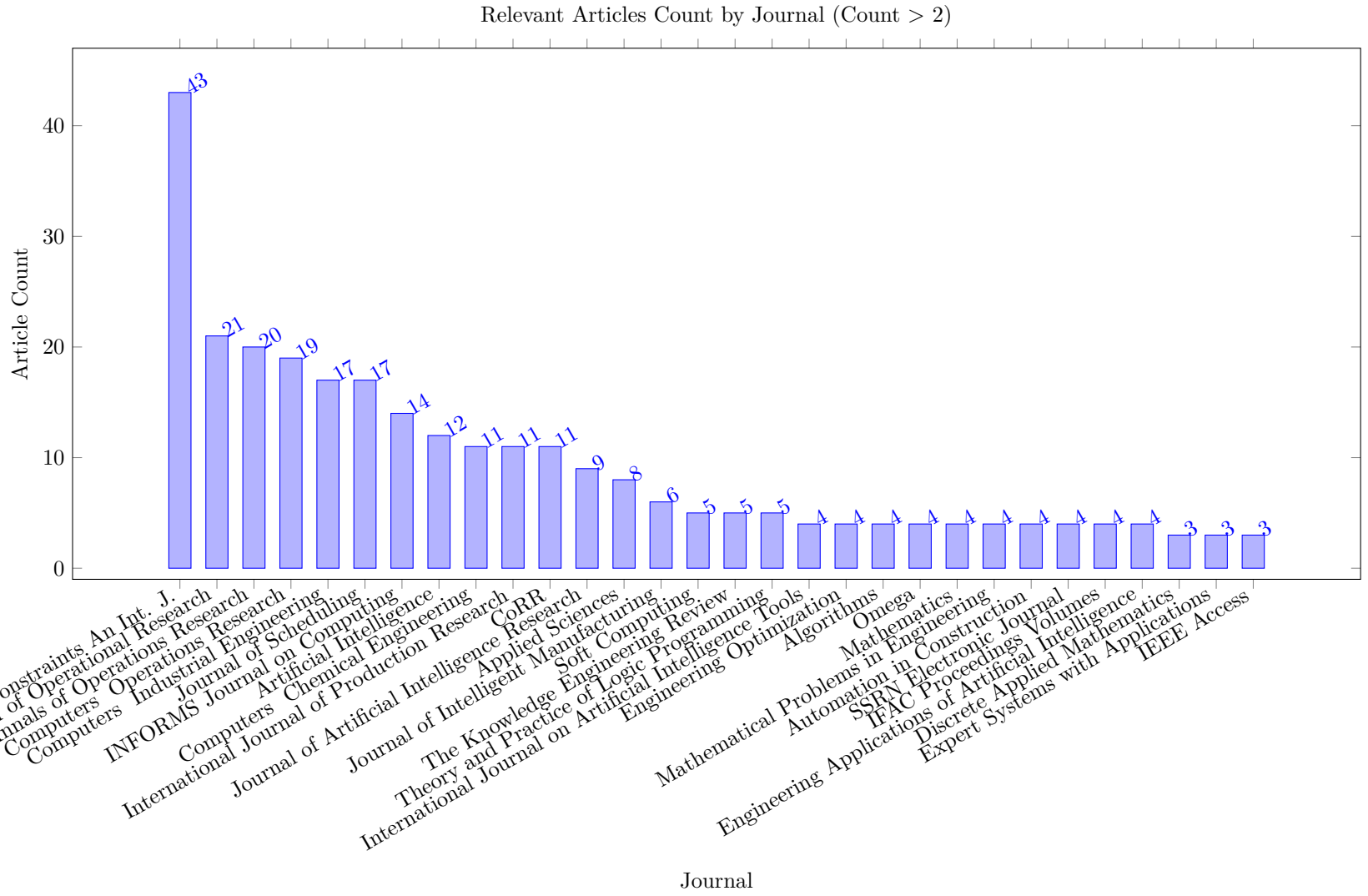
3.75
3.5
3.3
3
2.8
2.5
1.5
1
0.8
0.6
0.5
0.5
0.45
0.3
0
0
0
0
0
0
PATAT
GECCO
SMC
ICRA
CP
ICPP
CPAIOR
ILPS
ETFA
PSE
INAP
Automation
LION
ICAPS
KR
CSCLP
GOR
IPDPS
ICNC
ICTAI
ICAART
ICMLC
PADL
IJCAI
AAAI
ECAI
Operations Research Proceedings
ICROMA
ACT
ICNSC
ICORES
Conference Series

6 Journal Articles by Most Common Journals

6.1 Relevant Articles




Relevant Articles Count by Journal (Count > 2)
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40
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9
8
6
5
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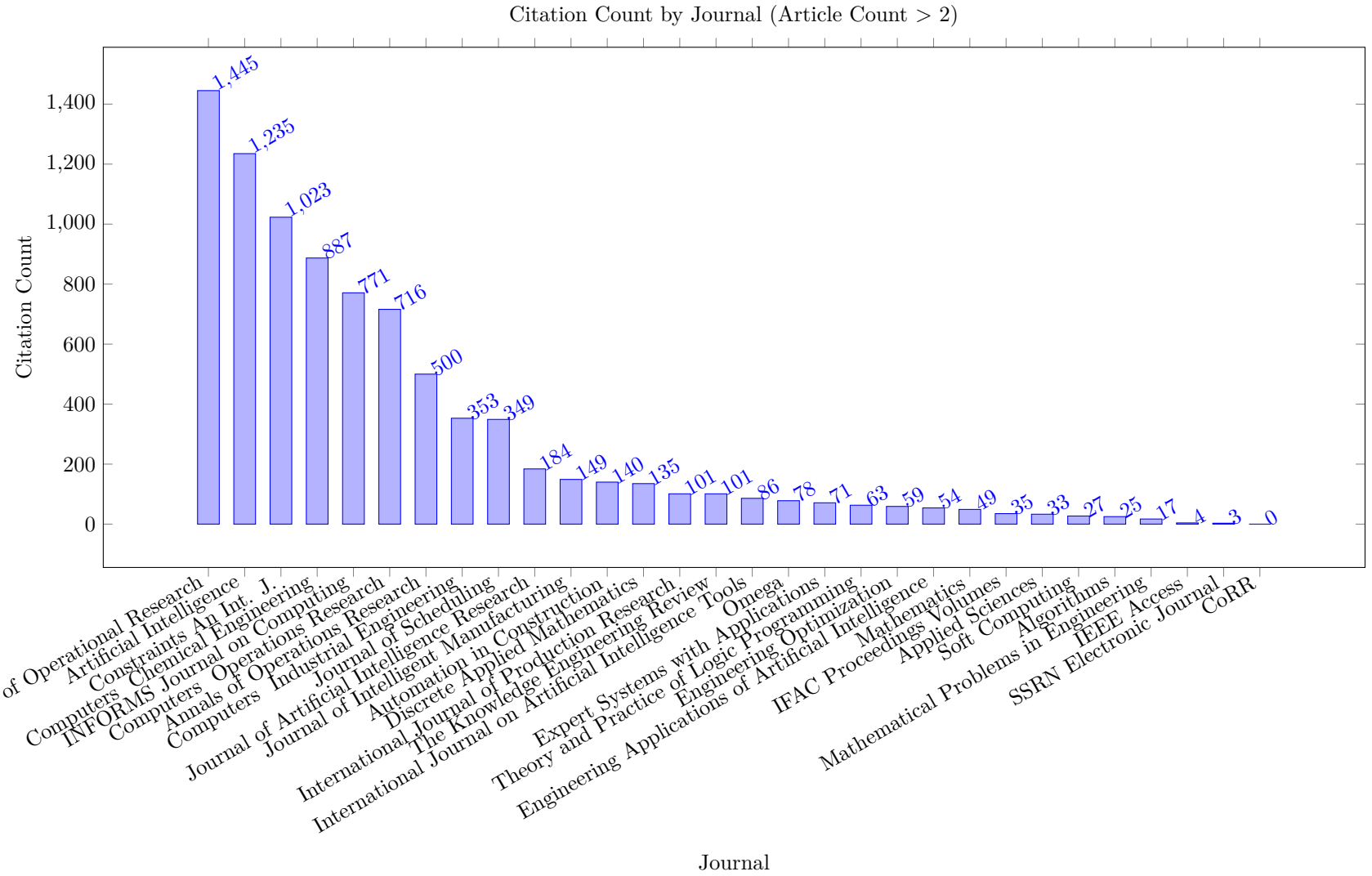
5
4
4
4
4
4
4
4
4
4
4
3
3
3
Constraints An Int. J.
European Journal of Operational Research
Annals of Operations Research
Computers Operations Research
Industrial Engineering
Computers
Journal of Scheduling
Journal on Computing
Artificial Intelligence
Chemical Engineering
INFORMS Journal on Computing
International Journal of Production Research
CoRR
Computers
Applied Sciences
Journal of Artificial Intelligence Research
Journal of Intelligent Manufacturing
Soft Computing
The Knowledge Engineering Review
Theory and Practice of Logic Programming
International Journal on Artificial Intelligence Tools
Engineering Optimization
Algorithms
Omega
Mathematics
Mathematical Problems in Engineering
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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1,023
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771
716
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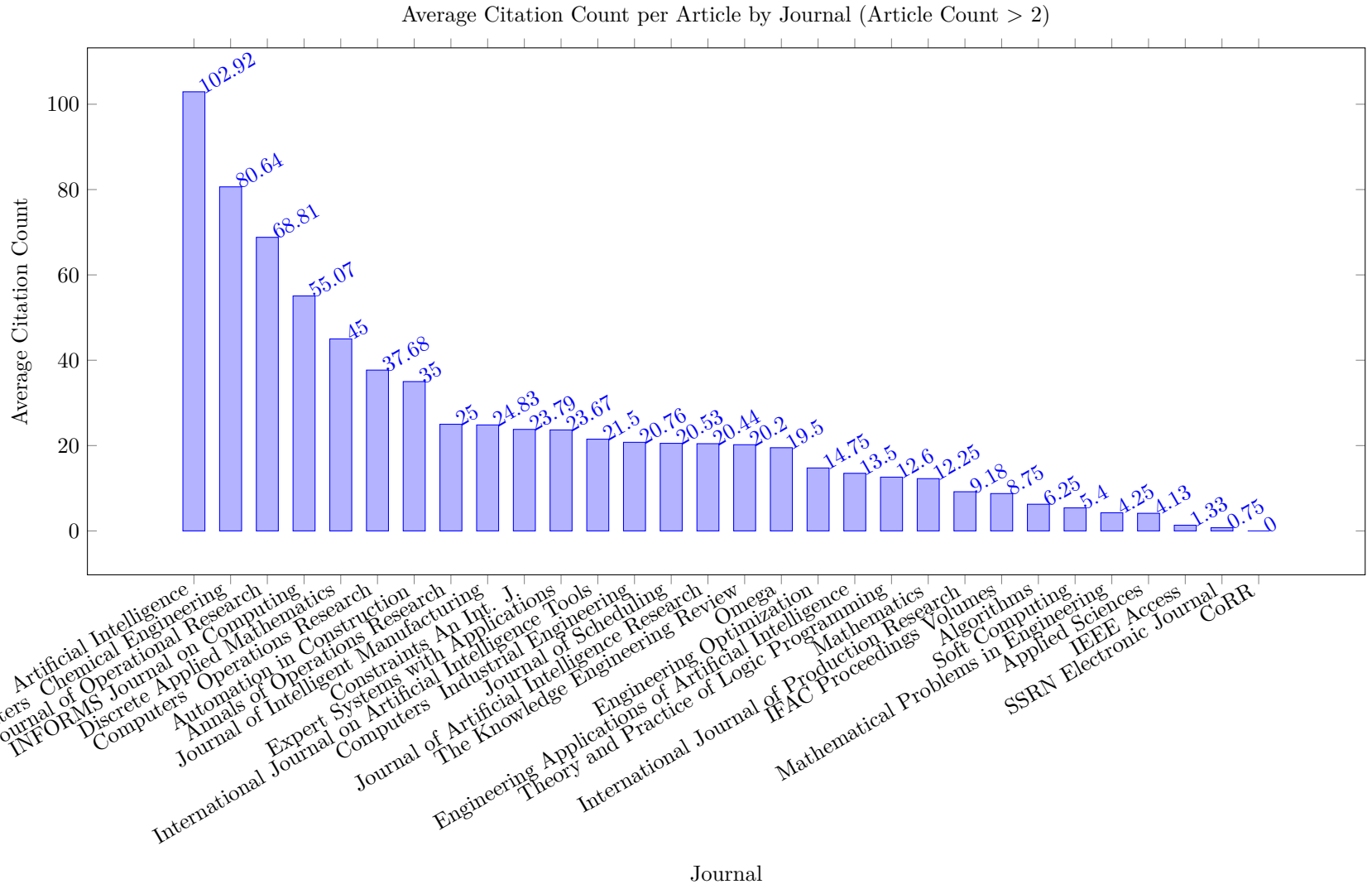
184
149
140
135
101
101
86
78
71
63
59
54
49
35
33
27
25
17
4
3
0
European Journal of Operational Research
Artificial Intelligence
Constraints An Int. J.
Chemical Engineering
Computers & Chemical Engineering
INFORMS Journal on Computing
Computers & Operations Research
Annals of Operations Research
Industrial Engineering
Journal of Scheduling
Computers & Industrial Engineering
Journal of Artificial Intelligence Research
Journal of Intelligent Manufacturing
Automation in Construction
Discrete Applied Mathematics
International Journal of Production Research
The Knowledge Engineering Review
International Journal on Artificial Intelligence Tools
Omega
Expert Systems with Applications
Theory and Practice of Logic Programming
Engineering Optimization
Engineering Applications of Artificial Intelligence
IFAC Proceedings Volumes
Mathematics
Applied Sciences
Soft Computing
Algorithms
Mathematical Problems in Engineering
IEEE Access
SSRN Electronic Journal
CoRR
Journal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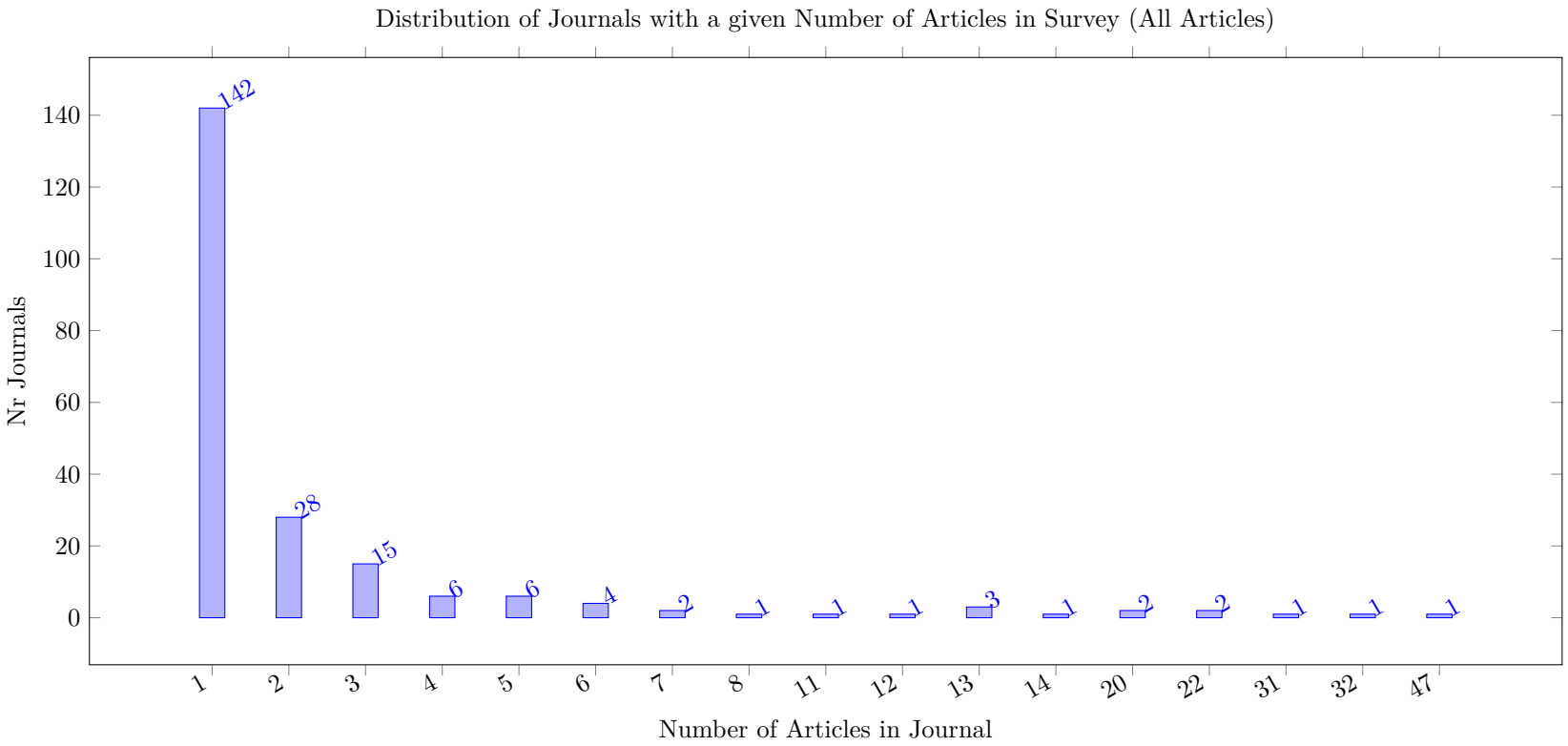
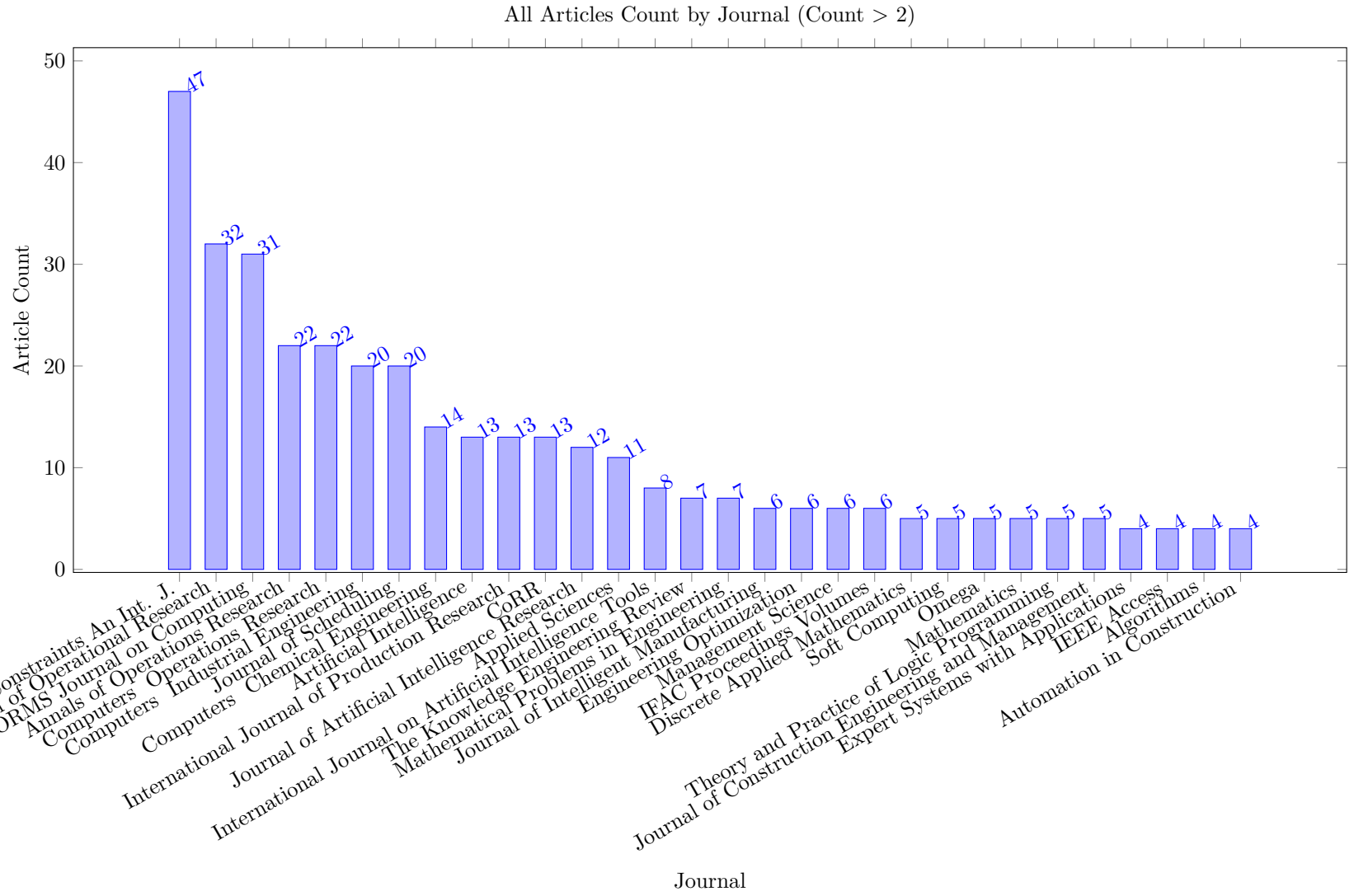
Artificial Intelligence
Computers
Chemical Engineering
European Journal of Operational Research
INFORMS Journal on Computing
Discrete Applied Mathematics
Computers Operations Research
Automation in Construction
Annals of Operations Research
Journal of Intelligent Manufacturing
International Journal on Artificial Intelligence Tools
Expert Systems with Applications
Constraints An Int. J.
Computers Industrial Engineering
Journal of Artificial Intelligence Research
The Knowledge Engineering Review
Journal of Scheduling
Omega
Engineering Optimization
Engineering Applications of Artificial Intelligence
Theory and Practice of Logic Programming
International Journal of Production Research
Mathematics
IFAC Proceedings Volumes
Mathematical Problems in Engineering
Algorithms
Soft Computing
Applied Sciences
IEEE Access
SSRN Electronic Journal
CoRR
Journal

6.2 All Articles

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6
6
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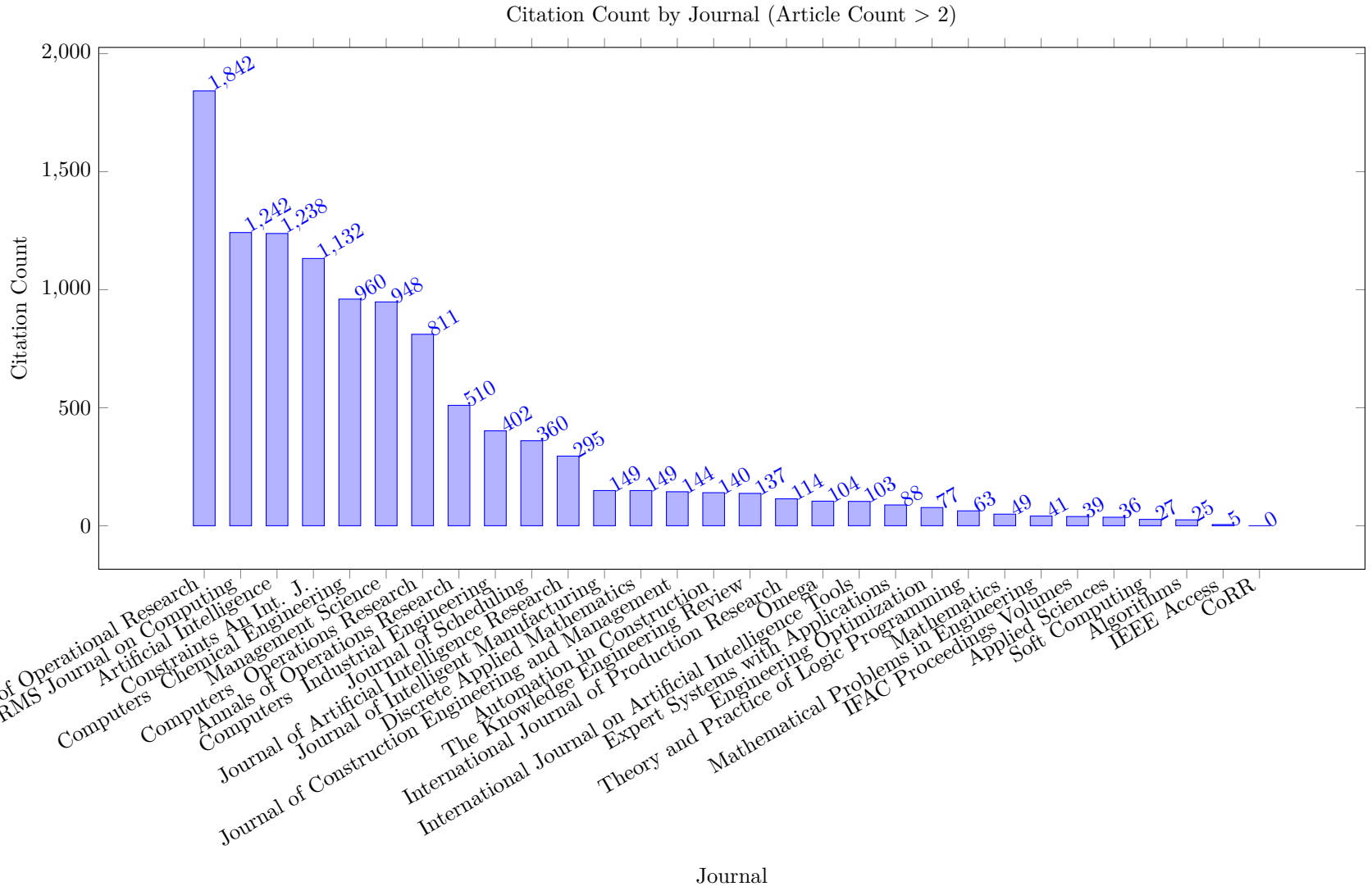
5
5
5
5
5
5
4
4
4
4
Constraints An Int. J.
European Journal of Operational Research
INFORMS Journal on Computing
Annals of Operations Research
Computers Operations Research
Industrial Engineering
Journal of Scheduling
Computers Chemical Engineering
Artificial Intelligence
International Journal of Production 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
Omega
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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European Journal of Operational Research
INFORMS Journal on Computing
Artificial Intelligence
Constraints An Int. J.
Computers Chemical Engineering
Management Science
Computers Operations Research
Annals of Operations Research
Computers Industrial Engineering
Journal of Scheduling
Journal of Artificial Intelligence Research
Journal of Intelligent Manufacturing
Discrete Applied Mathematics
Journal of Construction Engineering and Management
Automation in Construction
The Knowledge Engineering Review
International Journal of Production Research
Omega
International Journal on Artificial Intelligence Tools
Expert Systems with Applications
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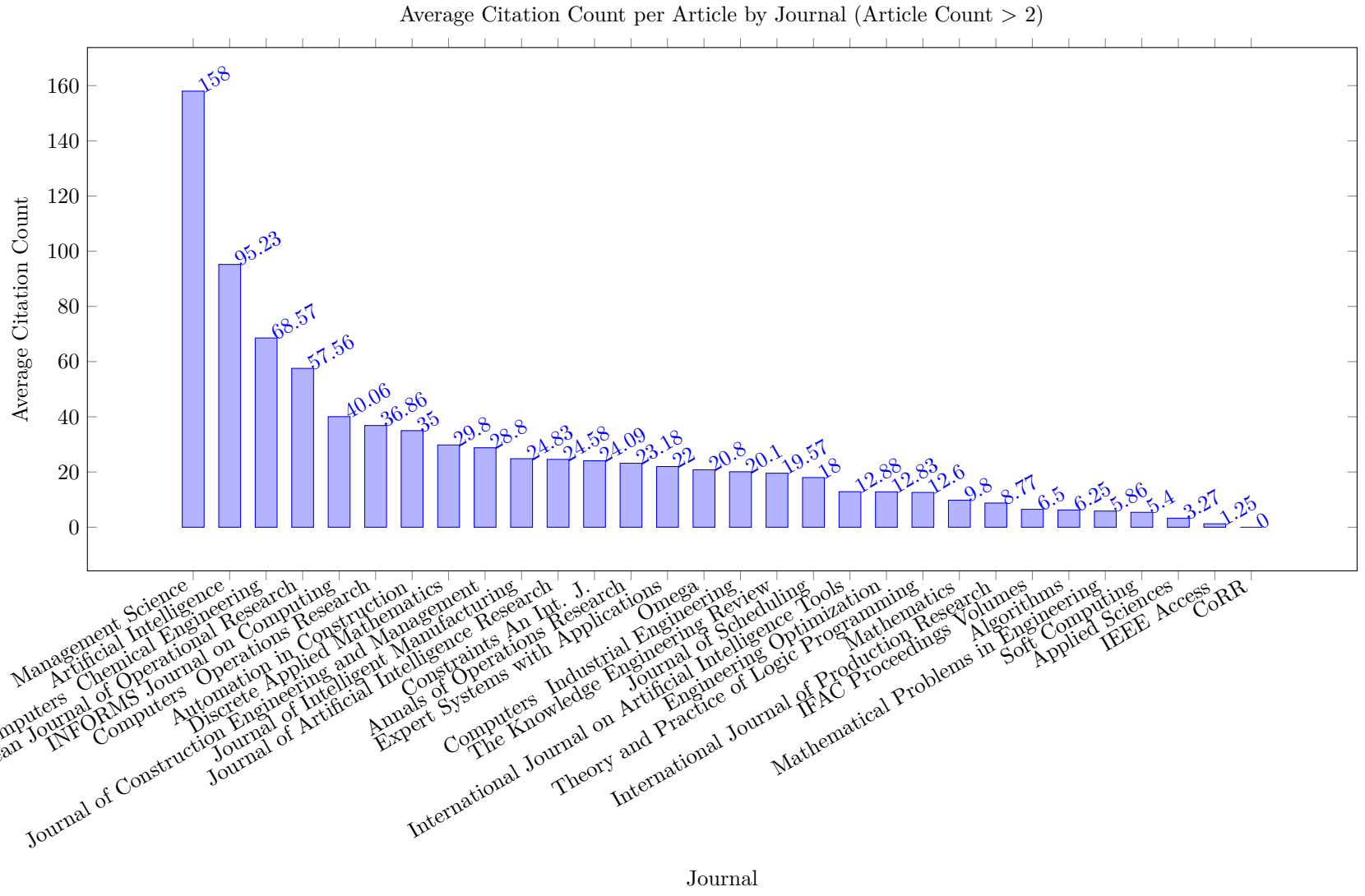
Engineering Optimization
Mathematical Problems in Engineering
IFAC Proceedings Volumes
Mathematics
Applied Sciences
Soft Computing
Algorithms
IEEE Access
CoRR
Journal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24.83
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22
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9.8
8.77
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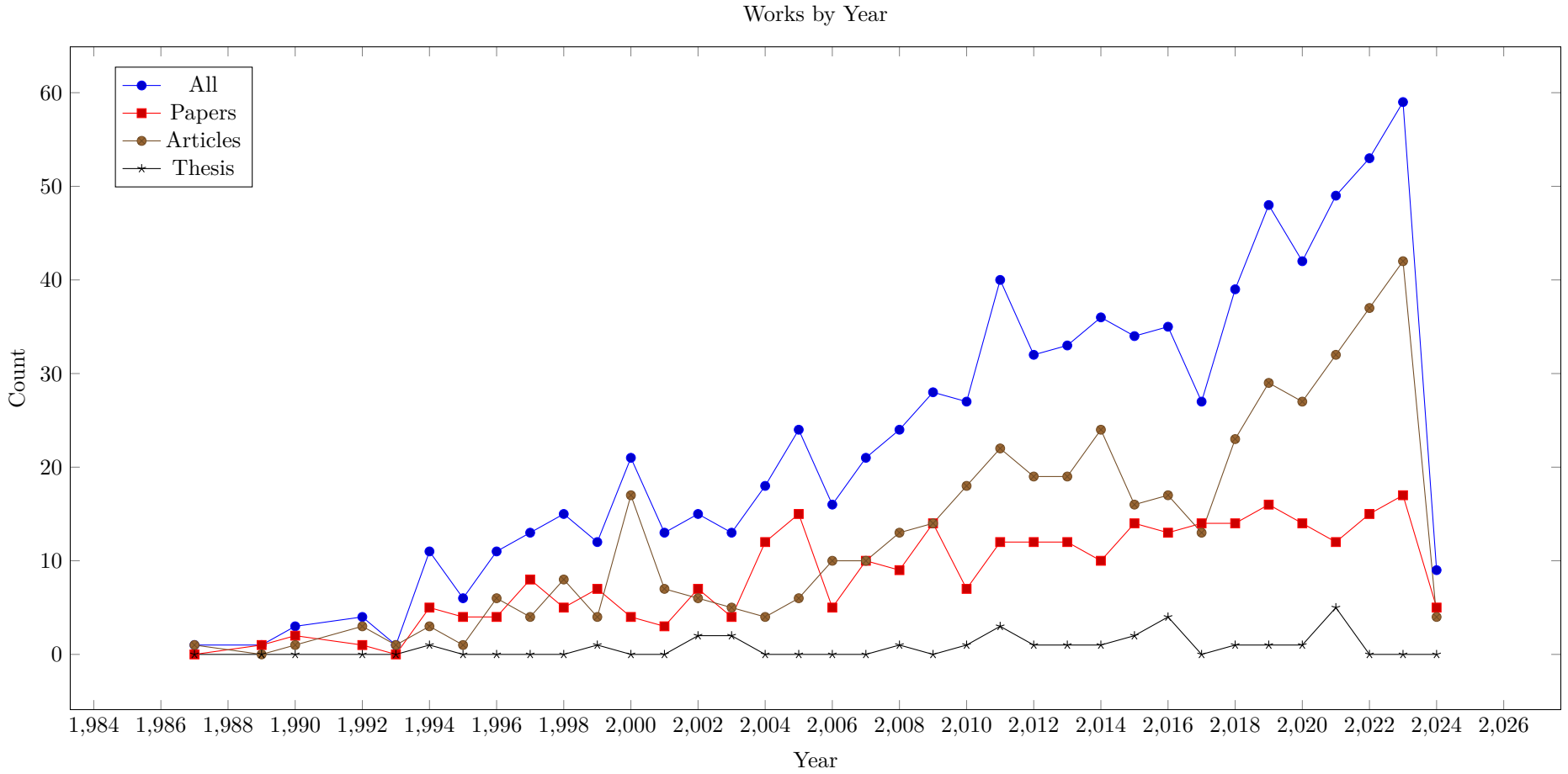
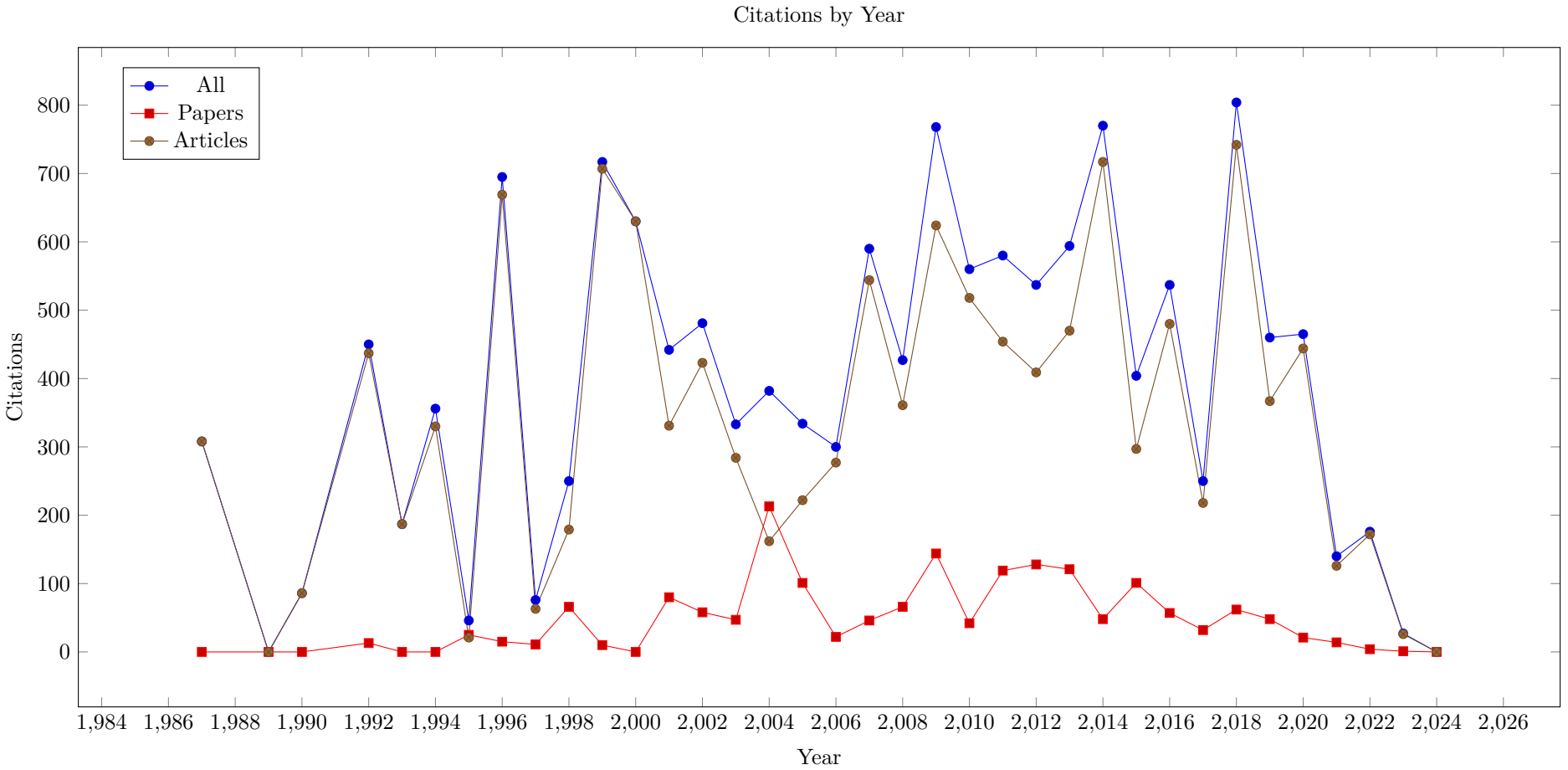
6.25
5.86
5.4
3.27
1.25
0
Management Science
Artificial Intelligence
Computers
Chemical Engineering
European Journal of Operational Research
INFORMS Journal on Computing
Computers Operations Research
Automation in Construction
Discrete Applied Mathematics
Journal of Construction Engineering and Management
Journal of Intelligent Manufacturing
Journal of Artificial Intelligence Research
Constraints An Int. J.
Annals of Operations Research
Expert Systems with Applications
Omega
Computers Industrial Engineering
The Knowledge Engineering Review
International Journal on Artificial Intelligence Tools
Journal of Scheduling
Theory and Practice of Logic Programming
Engineering Optimization
International Journal of Production Research
Mathematics
IFAC Proceedings Volumes
Mathematical Problems in Engineering
Algorithms
Soft Computing
Applied Sciences
IEEE Access
CoRR
Journal

7 Works by Year

7.1 Relevant Works




Citations by Year
All
Papers
Articles
Citations
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400
500
600
700
800
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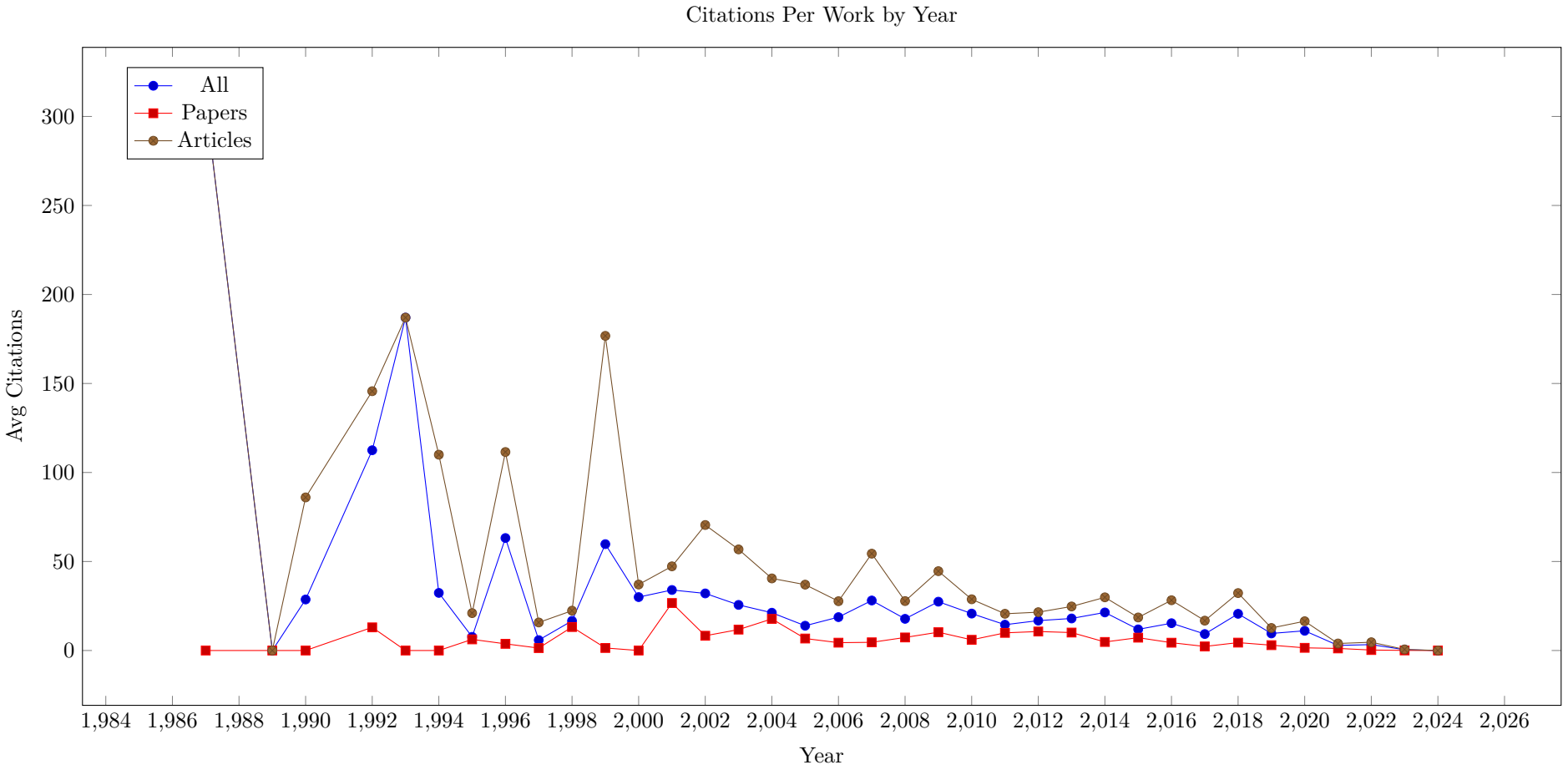
2,020
2,022
2,024
2,026
Year


Citations Per Work by Year
All
Papers
Articles
Avg Citations
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100
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2,000
2,002
2,004
2,006
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2,014
2,016
2,018
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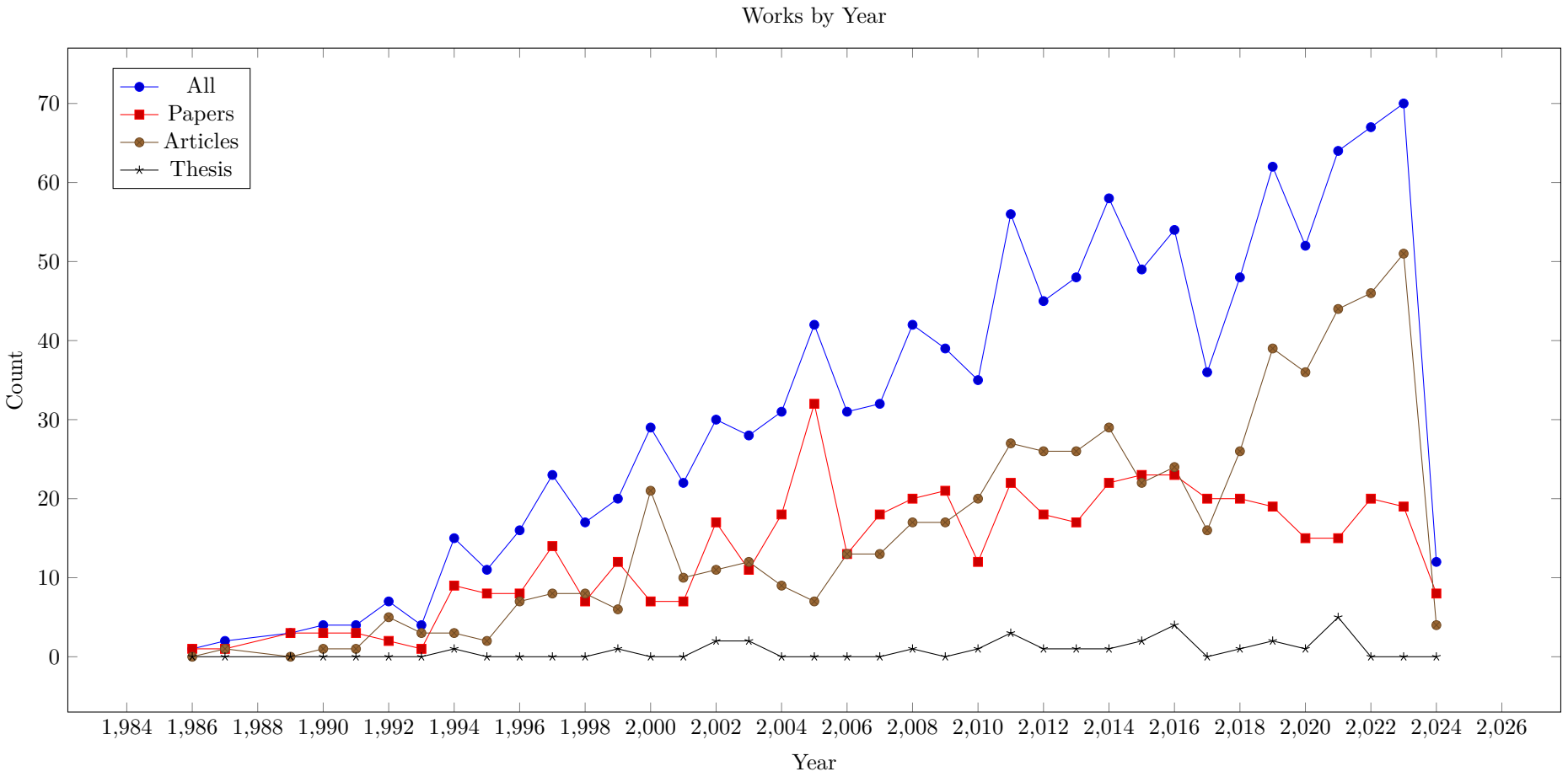
2,022
2,024
2,026
Year

7.2 All Works


Works by Year
All
Papers
Articles
Thesis
Count
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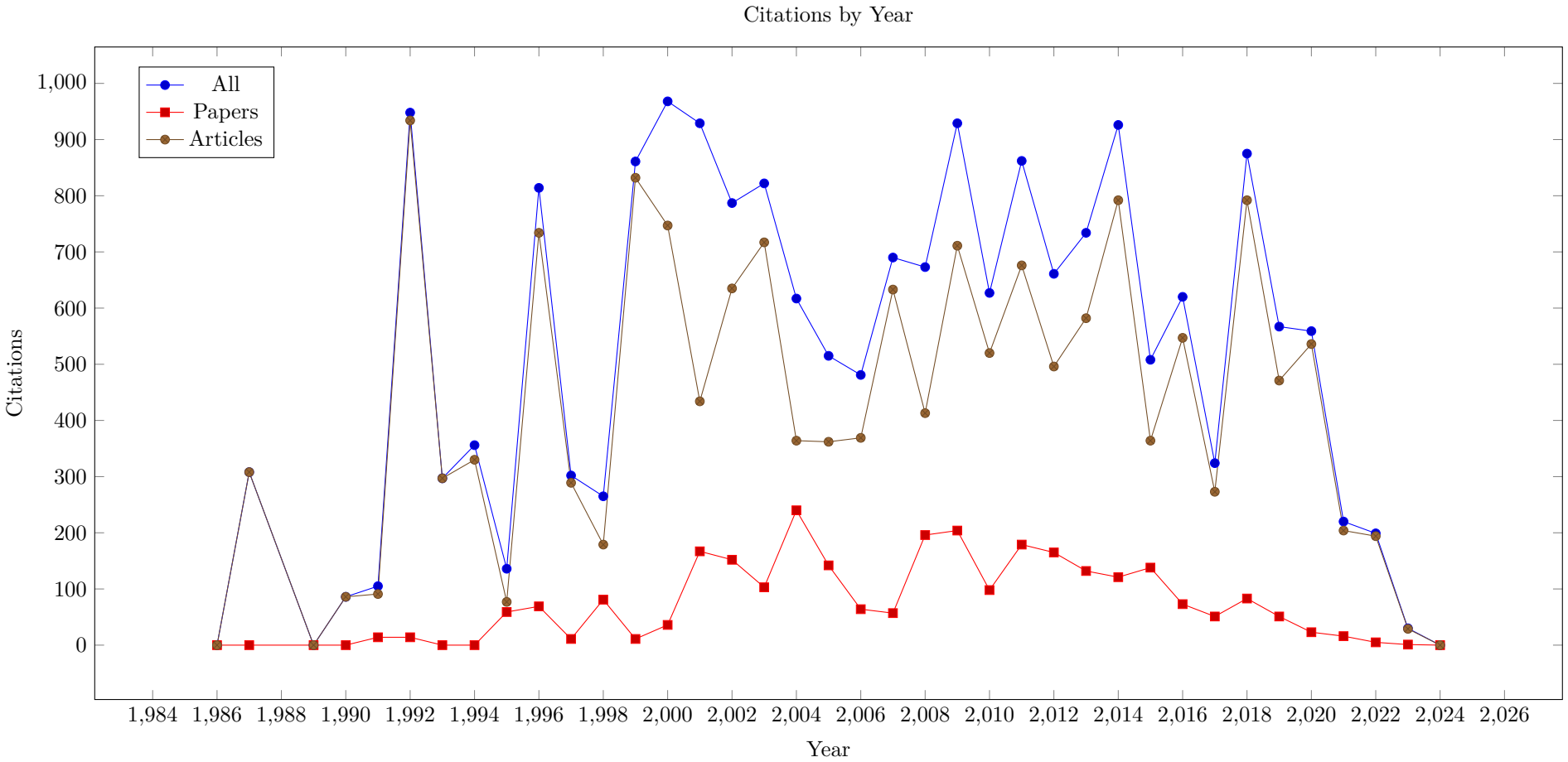
Citations by Year
All
Papers
Articles
Citations
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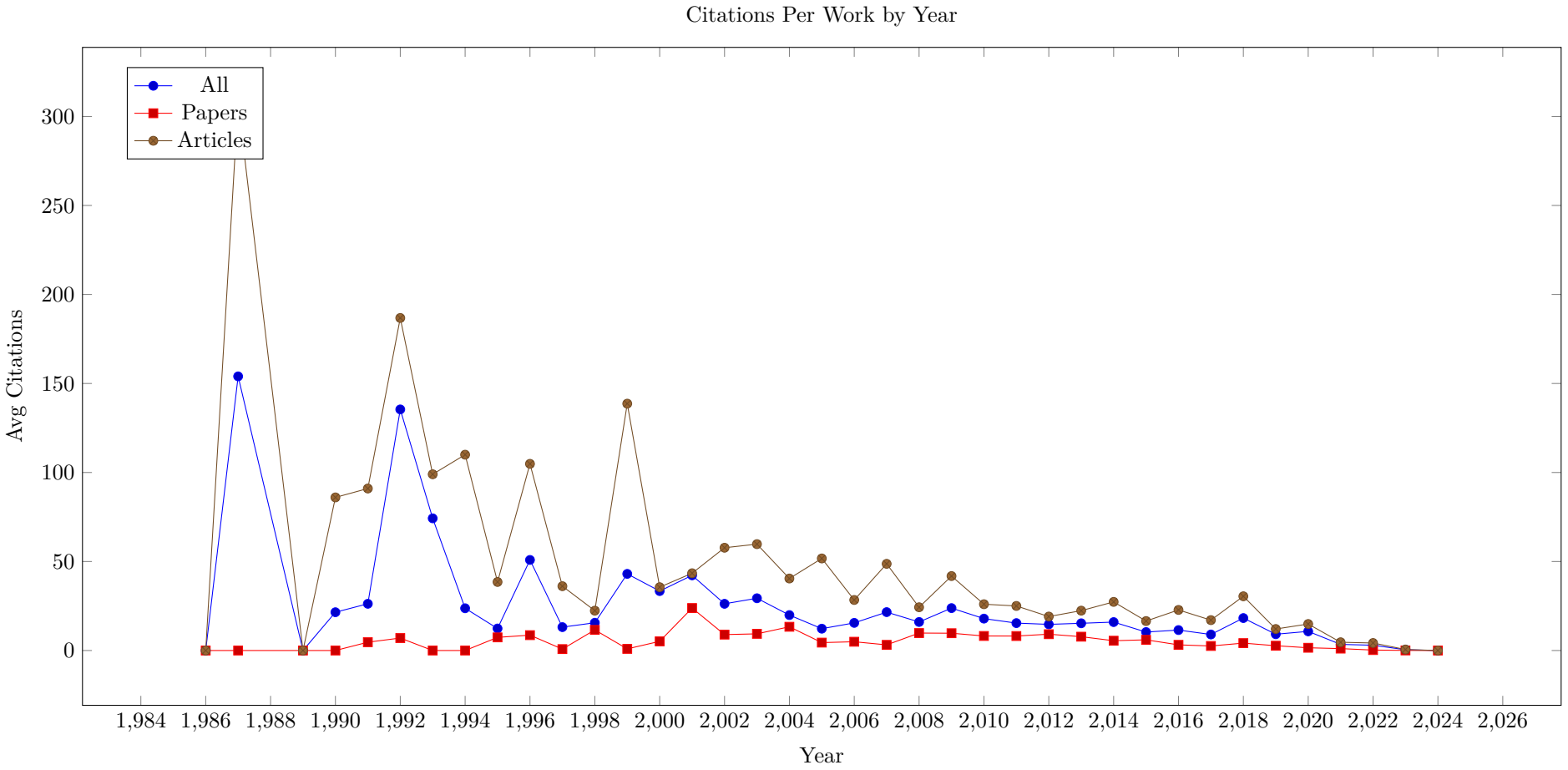
Year


Citations Per Work by Year
All
Papers
Articles
Avg Citations
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150
100
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2,004
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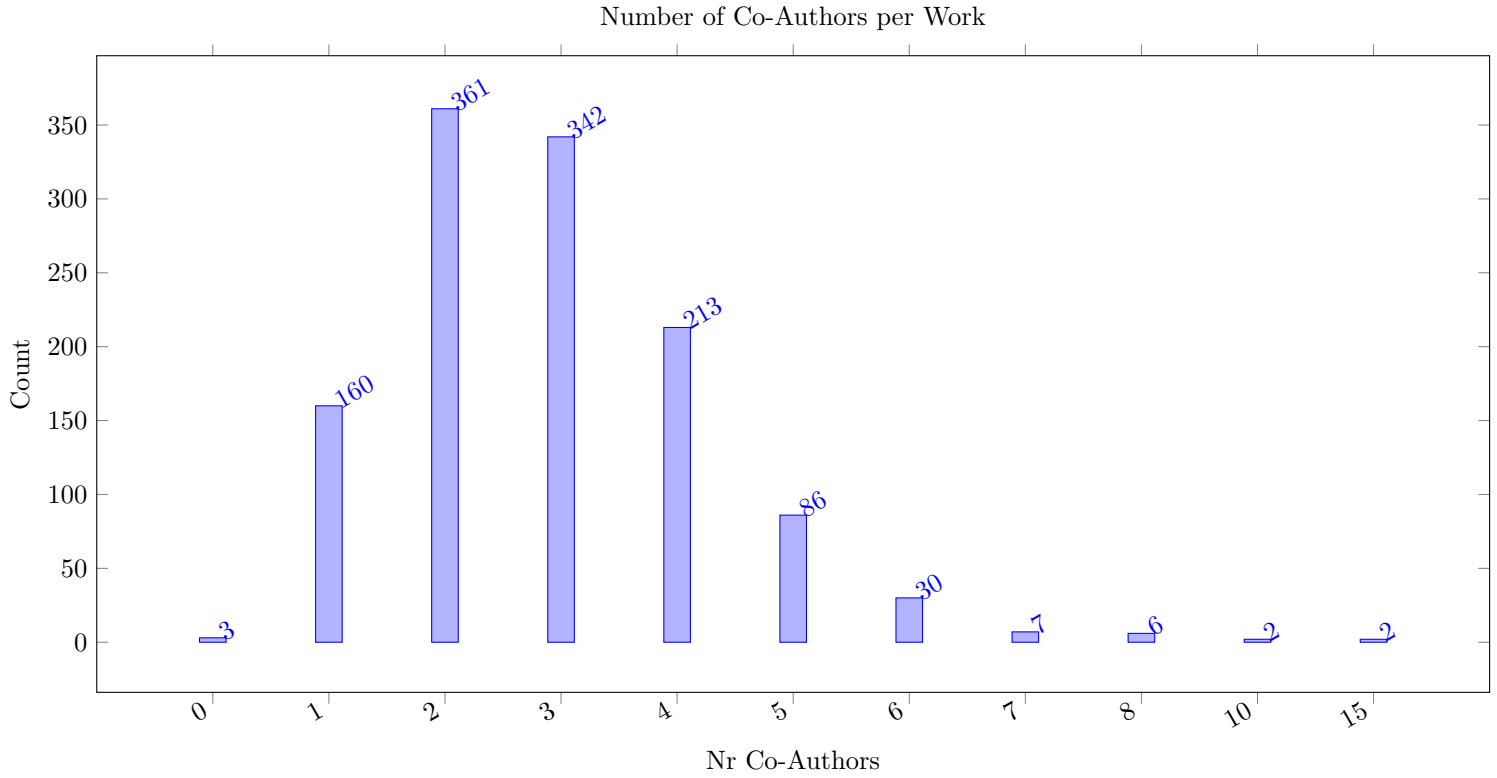
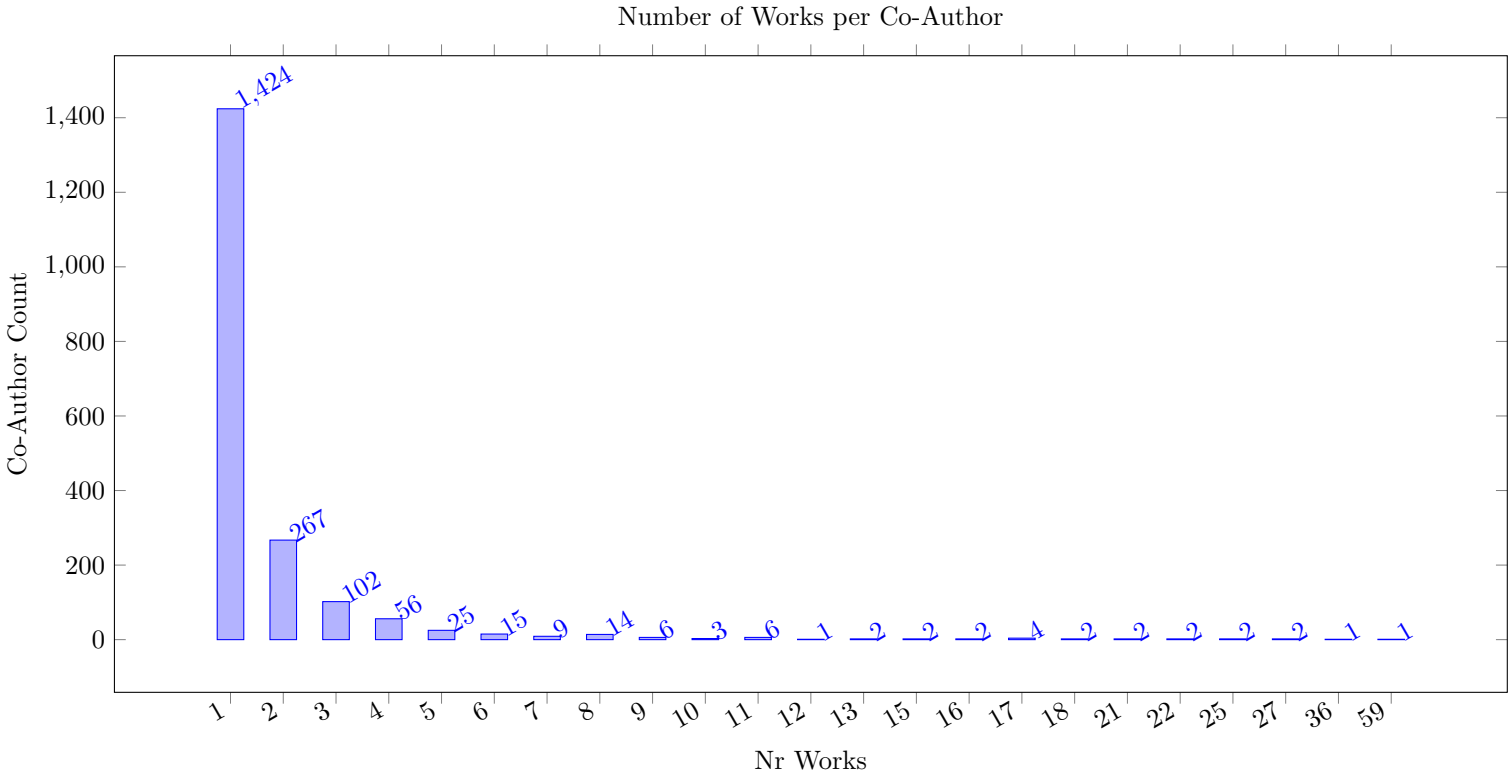
2,016
2,018
2,020
2,022
2,024
2,026
Year

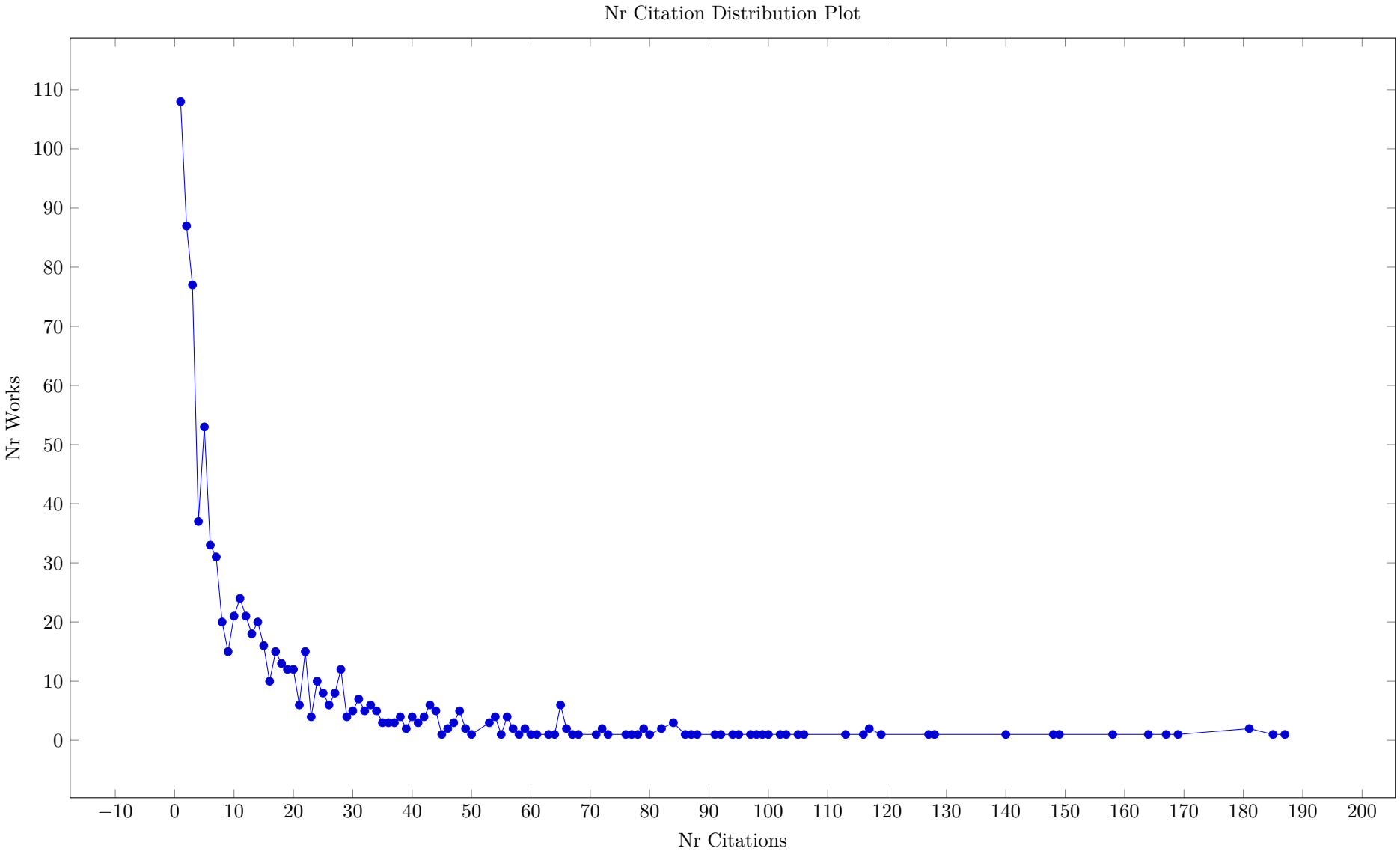
8 Number of Coauthors per Work



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	Schutt11	YunusogluY22	abs-1902-09244	ZhuSZW23	VilimLS15	Siala15a	abs-2211-14492	ZeballosNH11	abs-1911-04766	abs-2402-00459	ZhangBB22	YuraszeckMCCR23	ZeballosQH10	YuraszeckMPV22	ZeballosH05	abs-2305-19888	ZhouGL15	
Total		112922.00	84802.00	83920.00	83823.00	81659.00	81057.00	80257.00	79472.00	77116.00	76329.00	75824.00	75332.00	74640.00	72672.00	72364.00	71199.00	70834.00	70639.00	70374.
Baptiste02	106568.00	330.00	266.00	201.00	173.00	169.00	172.00	226.00	161.00	172.00	148.00	135.00	159.00	163.00	149.00	193.00	137.00	144.00	147.00	159.
Astrand21	105144.00	307.00	228.00	200.00	174.00	165.00	162.00	191.00	151.00	143.00	157.00	142.00	153.00	144.00	132.00	173.00	130.00	149.00	159.00	149.
Beck99	96685.00	240.00	229.00	164.00	154.00	157.00	155.00	194.00	143.00	147.00	138.00	137.00	133.00	126.00	137.00	130.00	132.00	123.00	126.00	141.
BartakSR10	90728.00	232.00	207.00	161.00	134.00	152.00	143.00	177.00	142.00	140.00	118.00	120.00	148.00	118.00	129.00	145.00	126.00	115.00	132.00	134.
Dejemeppe16	90169.00	336.00	283.00	219.00	197.00	168.00	174.00	251.00	170.00	182.00	171.00	163.00	160.00	151.00	157.00	162.00	140.00	144.00	139.00	167.
AwadMDMT22	86077.00	226.00	168.00	176.00	153.00	134.00	132.00	135.00	133.00	150.00	129.00	120.00	117.00	130.00	130.00	132.00	123.00	129.00	112.00	128.
BeckDDF98	83598.00	223.00	160.00	158.00	146.00	136.00	124.00	161.00	126.00	145.00	111.00	115.00	116.00	110.00	127.00	115.00	130.00	98.00	110.00	112.
AbreuN22	81208.00	229.00	146.00	167.00	137.00	142.00	124.00	128.00	137.00	104.00	108.00	124.00	116.00	134.00	111.00	161.00	105.00	133.00	126.00	117.
AbreuPNF23	80697.00	232.00	155.00	176.00	146.00	135.00	114.00	125.00	124.00	113.00	105.00	123.00	108.00	125.00	107.00	161.00	105.00	126.00	123.00	118.
AfsarVPG23	80610.00	190.00	137.00	144.00	138.00	128.00	121.00	125.00	132.00	108.00	118.00	117.00	110.00	121.00	117.00	133.00	107.00	102.00	104.00	111.
AstrandJZ20	79552.00	181.00	153.00	131.00	131.00	122.00	127.00	150.00	108.00	110.00	109.00	102.00	122.00	114.00	101.00	119.00	102.00	105.00	115.00	99.
ArtiguesLH13	78307.00	158.00	149.00	152.00	123.00	95.00	119.00	125.00	108.00	134.00	109.00	101.00	97.00	94.00	113.00	97.00	117.00	101.00	100.00	106.
Groleaz21	76320.00	368.00	246.00	227.00	198.00	201.00	195.00	234.00	191.00	166.00	171.00	179.00	181.00	159.00	144.00	206.00	131.00	162.00	166.00	190.
ArmstrongGOS21	76104.00	174.00	148.00	145.00	121.00	136.00	119.00	124.00	118.00	99.00	123.00	104.00	118.00	119.00	110.00	117.00	104.00	118.00	130.00	112.
BartakSR08	75714.00	158.00	164.00	122.00	108.00	123.00	121.00	151.00	112.00	105.00	95.00	102.00	120.00	102.00	95.00	117.00	100.00	89.00	105.00	94.
Fahimi16	75226.00	239.00	257.00	147.00	152.00	159.00	159.00	226.00	140.00	146.00	138.00	118.00	140.00	131.00	130.00	136.00	128.00	122.00	132.00	126.
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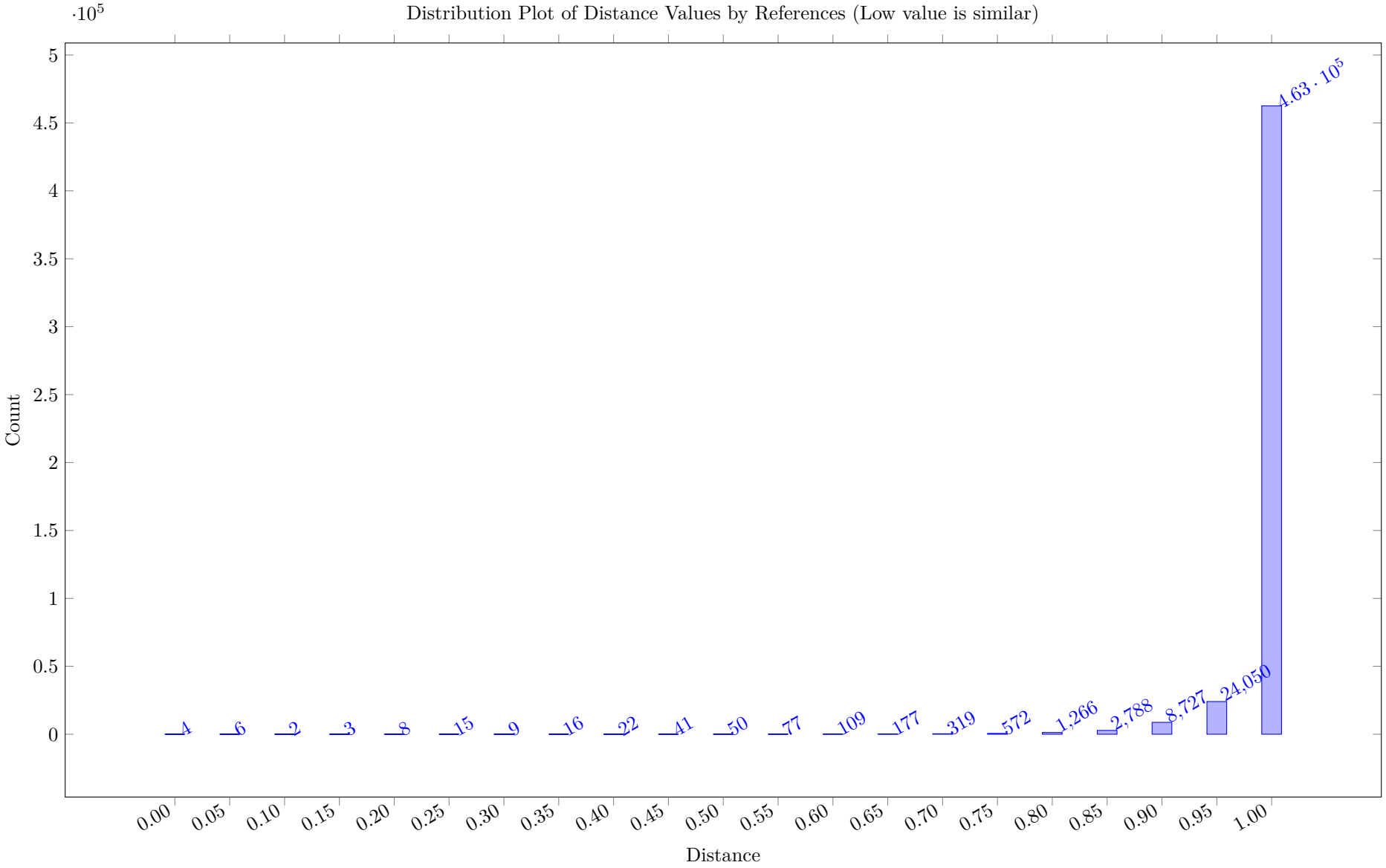
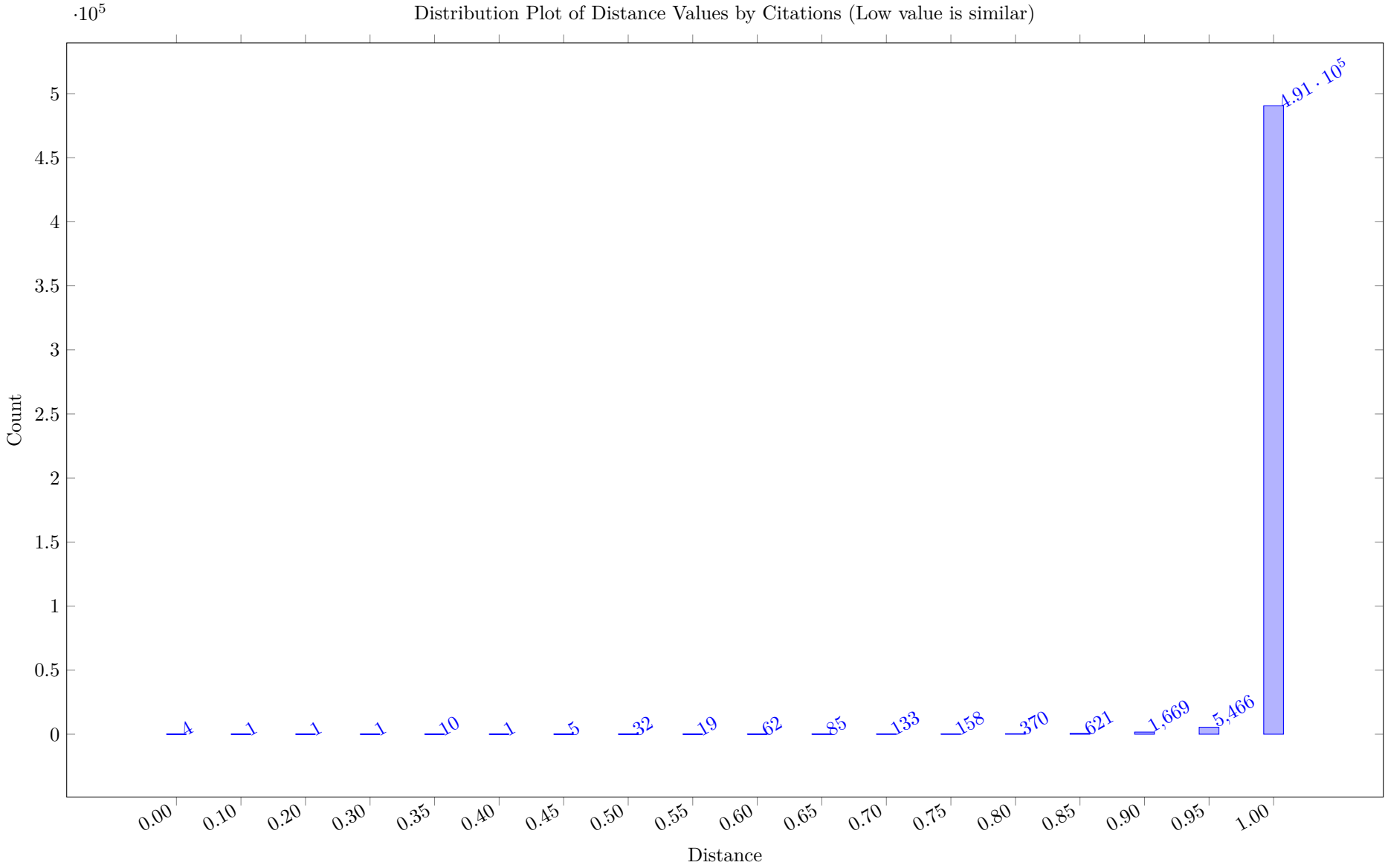
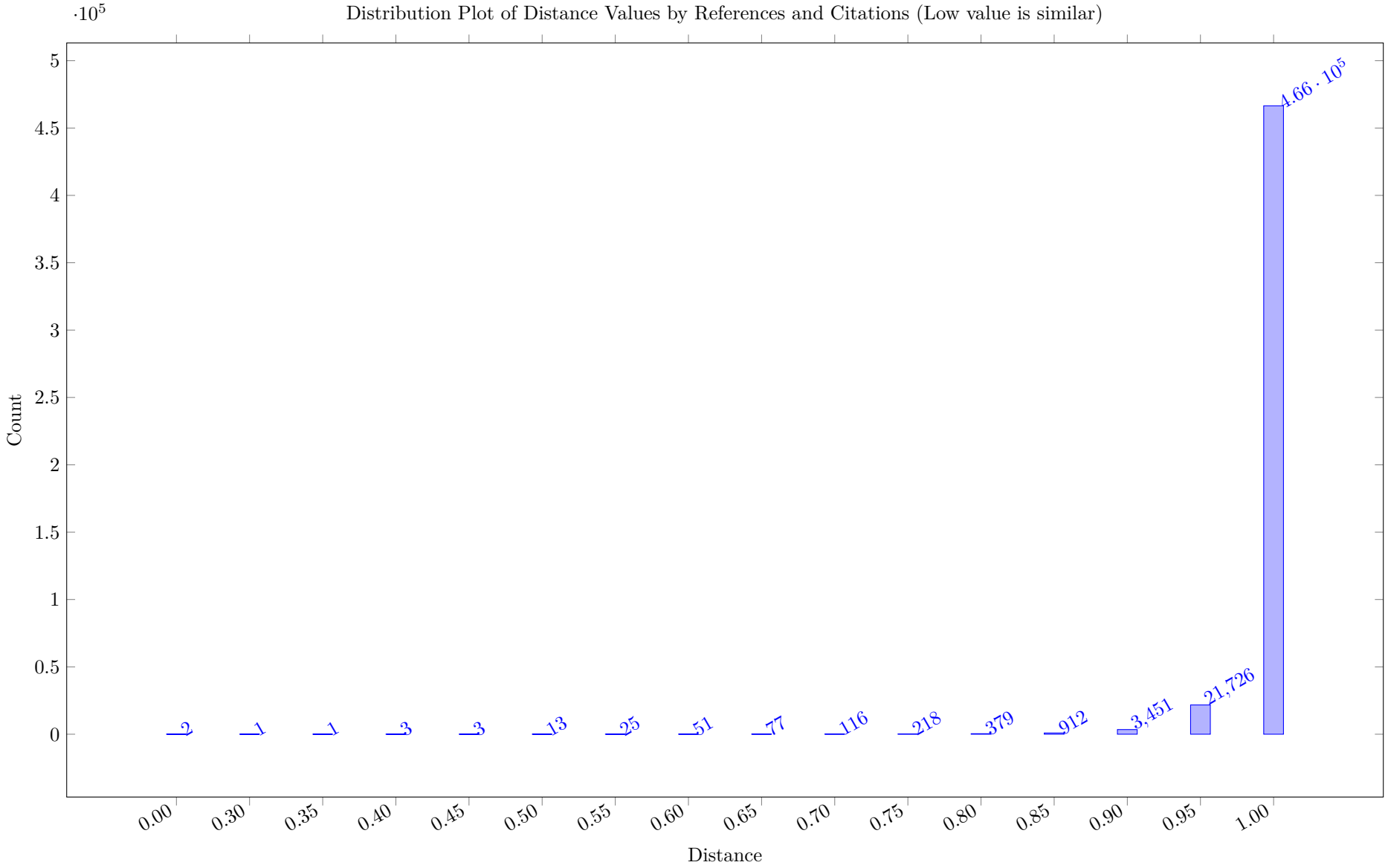
Caseau2001	74913.00	196.00	197.00	138.00	135.00	126.00	145.00	163.00	125.00	130.00	118.00	122.00	131.00	136.00	117.00	125.00	112.00	112.00	109.00	117.
AbreuNP23	73543.00	203.00	131.00	157.00	131.00	137.00	116.00	119.00	124.00	102.00	94.00	107.00	112.00	126.00	100.00	150.00	92.00	125.00	119.00	102.
Caballero19	73399.00	170.00	239.00	123.00	129.00	116.00	158.00	202.00	106.00	109.00	121.00	93.00	120.00	126.00	112.00	85.00	98.00	109.00	101.00	118.
Akan2023	72895.00	240.00	152.00	135.00	142.00	102.00	111.00	105.00	109.00	109.00	100.00	109.00	88.00	107.00	104.00	103.00	106.00	91.00	103.00	130.
BlazewiczDP96	72783.00	231.00	179.00	141.00	126.00	131.00	123.00	149.00	123.00	114.00	97.00	111.00	134.00	95.00	101.00	126.00	94.00	97.00	106.00	113.
BajestaniB13	72140.00	181.00	120.00	128.00	115.00	117.00	110.00	110.00	102.00	114.00	89.00	100.00	96.00	86.00	89.00	99.00	86.00	86.00	88.00	105.
Godet21a	71618.00	256.00	263.00	166.00	155.00	154.00	177.00	248.00	157.00	132.00	159.00	130.00	149.00	158.00	130.00	147.00	124.00	130.00	133.00	155.
AbreuAPNM21	71617.00	208.00	128.00	147.00	121.00	127.00	103.00	114.00	119.00	89.00	90.00	113.00	107.00	121.00	96.00	152.00	86.00	111.00	111.00	110.
BidotVLB09	71073.00	190.00	140.00	139.00	134.00	110.00	122.00	134.00	105.00	126.00	102.00	101.00	106.00	113.00	114.00	114.00	115.00	90.00	97.00	95.
BeckF98	70599.00	177.00	142.00	122.00	115.00	122.00	113.00	142.00	109.00	100.00	102.00	108.00	97.00	100.00	97.00	96.00	99.00	91.00	86.00	109.
AlfieriGPS23	70220.00	190.00	118.00	141.00	132.00	116.00	99.00	107.00	116.00	102.00	82.00	114.00	109.00	110.00	90.00	130.00	97.00	94.00	105.00	97.
Artigues2011	70126.00	136.00	156.00	98.00	102.00	109.00	127.00	146.00	99.00	91.00	75.00	89.00	122.00	100.00	84.00	95.00	83.00	76.00	87.00	87.
ArkhipovBL19	70072.00	137.00	166.00	105.00	104.00	97.00	135.00	121.00	92.00	89.00	97.00	87.00	103.00	108.00	87.00	80.00	78.00	89.00	83.00	97.
Banaszak2014	69918.00	155.00	124.00	97.00	96.00	109.00	105.00	123.00	97.00	105.00	87.00	81.00	93.00	88.00	97.00	94.00	106.00	84.00	97.00	88.
BosiM2001	68956.00	156.00	162.00	131.00	110.00	111.00	137.00	158.00	115.00	114.00	100.00	105.00	126.00	112.00	105.00	106.00	95.00	98.00	108.00	101.
BeckF00	68770.00	146.00	167.00	105.00	108.00	110.00	117.00	156.00	99.00	106.00	93.00	84.00	107.00	91.00	92.00	92.00	94.00	76.00	76.00	79.
Brucker2002	68728.00	196.00	180.00	138.00	132.00	130.00	152.00	156.00	119.00	120.00	100.00	106.00	129.00	129.00	101.00	115.00	93.00	108.00	102.00	119.
Braune2022	67771.00	146.00	165.00	133.00	125.00	128.00	131.00	136.00	115.00	116.00	112.00	104.00	118.00	118.00	105.00	100.00	103.00	109.00	102.00	110.
BonninMNE24	67643.00	172.00	159.00	122.00	113.00	112.00	119.00	130.00	104.00	98.00	110.00	99.00	112.00	106.00	99.00	131.00	99.00	101.00	95.00	109.
BeckR03	66804.00	156.00	132.00	127.00	131.00	115.00	119.00	134.00	111.00	129.00	93.00	100.00	103.00	90.00	107.00	97.00	106.00	72.00	85.00	87.
BeckPS03	66575.00	151.00	138.00	120.00	122.00	106.00	116.00	131.00	104.00	115.00	91.00	92.00	99.00	105.00	101.00	96.00	107.00	86.00	93.00	85.
Bit-Monnot23	66317.00	135.00	154.00	99.00	106.00	120.00	129.00	177.00	105.00	94.00	103.00	98.00	121.00	105.00	86.00	105.00	91.00	86.00	89.00	95.
ChenGPSH10	66270.00	163.00	164.00	109.00	101.00	121.00	127.00	149.00	110.00	120.00	96.00	96.00	113.00	97.00	102.00	106.00	102.00	82.00	94.00	92.
AntuoriHHEN20	66161.00	134.00	121.00	100.00	104.00	82.00	95.00	113.00	109.00	94.00	86.00	99.00	90.00	78.00	82.00	83.00	87.00	68.00	74.00	77.
Benedetti2008	66033.00	138.00	140.00	103.00	102.00	103.00	111.00	130.00	98.00	102.00	94.00	88.00	94.00	97.00	95.00	81.00	96.00	88.00	95.00	95.
Other		104488.00	77607.00	77927.00	78294.00	76268.00	75558.00	73819.00	74357.00	72093.00	71637.00	71148.00	70322.00	69755.00	68064.00	67201.00	66711.00	66379.00	66046.00	65607.

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

From/To Total	Total	ZeballosM09 555.11	ZeballosH05 553.85	abs-2312-13682 540.26	abs-1901-07914 539.63	VilimLS15 535.89	ZhangYW21 534.74	Xujun2009 533.56	ZeballosQH10 531.47	ZouZ20 530.58	Zhang2005 529.69	abs-1902-09244 526.14	Wolf05 523.05	ZhangBB22 521.39	ZeballosNH11 521.16	abs-2211-14492 521.15	WatsonB08 519.32	ZibranR11a 519.15	abs-2305-19888 518.83	abs-2306-05747 518.02	WikarekS19 514.06	ZhouGL15 513.40	VilimBC05 512.10	Other
Banaszak2014	553.31	0.77	0.76	0.59	0.67	0.65	0.63	0.76	0.66	0.62	0.66	0.56	0.68	0.60	0.66	0.59	0.64	0.60	0.57	0.57	0.65	0.65	0.67	539.09
Banaszak2008	550.04	0.80	0.77	0.60	0.70	0.64	0.59	0.80	0.70	0.59	0.67	0.56	0.71	0.59	0.66	0.62	0.67	0.62	0.56	0.59	0.64	0.63	0.67	535.66
Bartak02a	545.78	0.62	0.66	0.60	0.65	0.70	0.61	0.68	0.62	0.59	0.70	0.57	0.66	0.61	0.59	0.59	0.63	0.50	0.53	0.57	0.67	0.56	0.70	532.16
BartakSR08	544.32	0.60	0.66	0.57	0.60	0.68	0.63	0.70	0.59	0.56	0.80	0.58	0.70	0.71	0.60	0.63	0.67	0.52	0.56	0.59	0.70	0.65	0.76	530.26
BeckPS03	533.21	0.73	0.78	0.57	0.64	0.73	0.68	0.72	0.70	0.55	0.70	0.73	0.74	0.66	0.74	0.65	0.73	0.49	0.60	0.64	0.72	0.64	0.71	518.36
AstrandJZ20	532.84	0.61	0.63	0.61	0.56	0.67	0.67	0.67	0.59	0.53	0.57	0.66	0.62	0.68	0.59	0.57	0.67	0.52	0.62	0.64	0.63	0.67	0.68	519.20
AfsarVPG23	532.40	0.62	0.65	0.54	0.53	0.63	0.74	0.56	0.68	0.59	0.52	0.69	0.62	0.61	0.58	0.69	0.69	0.50	0.59	0.67	0.55	0.60	0.58	518.98
ArkhipovBL19	524.40	0.54	0.54	0.51	0.53	0.80	0.65	0.55	0.57	0.49	0.63	0.59	0.71	0.64	0.54	0.54	0.60	0.41	0.59	0.55	0.72	0.54	0.63	511.56
AstrandJZ18	524.20	0.67	0.66	0.69	0.69	0.62	0.52	0.69	0.64	0.56	0.54	0.52	0.60	0.53	0.53	0.51	0.56	0.64	0.55	0.51	0.54	0.56	0.59	511.28
Benedetti2008	520.79	0.66	0.69	0.60	0.61	0.68	0.64	0.71	0.65	0.59	0.75	0.60	0.78	0.61	0.64	0.60	0.64	0.50	0.60	0.61	0.66	0.64	0.70	506.62
AngelsmarkJ00	517.61	0.63	0.53	0.48	0.60	0.58	0.48	0.64	0.49	0.50	0.68	0.39	0.60	0.51	0.56	0.52	0.56	0.54	0.44	0.47	0.57	0.54	0.53	505.76
ArtiguesLH13	516.23	0.68	0.71	0.58	0.52	0.62	0.49	0.66	0.65	0.57	0.68	0.61	0.63	0.53	0.71	0.56	0.52	0.59	0.58	0.49	0.53	0.57	0.60	503.17
Beck07	515.80	0.64	0.64	0.56	0.56	0.73	0.71	0.73	0.58	0.55	0.64	0.64	0.68	0.73	0.61	0.67	0.85	0.60	0.52	0.68	0.65	0.60	0.68	501.57
Astrand0F21	515.78	0.57	0.64	0.64	0.64	0.65	0.68	0.59	0.59	0.49	0.50	0.56	0.59	0.66	0.51	0.55	0.64	0.46	0.59	0.63	0.63	0.54	0.63	502.78
AalianPG23	508.99	0.62	0.59	0.73	0.59	0.59	0.54	0.63	0.59	0.56	0.47	0.58	0.56	0.52	0.48	0.44	0.55	0.61	0.61	0.56	0.49	0.50	0.56	496.62
AbidinK20	508.98	0.55	0.55	0.56	0.50	0.52	0.58	0.42	0.60	0.70	0.41	0.56	0.45	0.51	0.56	0.49	0.51	0.64	0.51	0.46	0.49	0.46	0.51	497.47
Astrand2020	508.71	0.57	0.70	0.64	0.62	0.59	0.67	0.66	0.62	0.53	0.54	0.57	0.64	0.61	0.54	0.51	0.61	0.53	0.59	0.58	0.63	0.53	0.64	495.60
BeckDDF98	508.67	0.72	0.73	0.57	0.63	0.59	0.63	0.67	0.67	0.55	0.73	0.67	0.61	0.58	0.71	0.60	0.62	0.56	0.52	0.57	0.65	0.58	0.65	494.88
Bartak02	505.11	0.67	0.59	0.53	0.59	0.60	0.47	0.69	0.53	0.55	0.70	0.45	0.59	0.51	0.60	0.49	0.51	0.56	0.44	0.44	0.66	0.51	0.65	492.77
BeckFW11	504.13	0.61	0.62	0.63	0.60	0.74	0.72	0.67	0.63	0.47	0.59	0.62	0.70	0.75	0.55	0.72	0.93	0.53	0.62	0.77	0.69	0.62	0.65	489.70
Alaka21	503.23	0.53	0.60	0.56	0.57	0.52	0.63	0.53	0.60	0.68	0.47	0.53	0.51	0.53	0.46	0.49	0.48	0.52	0.55	0.48	0.50	0.54	0.54	491.42
Balduccini2017	500.91	0.58	0.55	0.52	0.58	0.61	0.48	0.62	0.47	0.54	0.61	0.47	0.54	0.49	0.54	0.54	0.58	0.50	0.46	0.50	0.60	0.55	0.55	489.02
Abuwarda2019	500.88	0.58	0.58	0.52	0.49	0.56	0.71	0.64	0.63	0.74	0.58	0.55	0.56	0.48	0.53	0.52	0.48	0.64	0.56	0.47	0.45	0.49	0.48	488.62
AwadMDMT22	500.61	0.61	0.66	0.53	0.47	0.61	0.65	0.55	0.66	0.58	0.59	0.68	0.68	0.57	0.71	0.61	0.58	0.51	0.66	0.58	0.56	0.57	0.60	487.39
BartakSR10	496.61	0.58	0.64	0.47	0.60	0.62	0.60	0.58	0.62	0.51	0.77	0.56	0.70	0.68	0.62	0.61	0.59	0.44	0.55	0.54	0.68	0.63	0.69	483.33
Artigues2011	496.41	0.53	0.54	0.44	0.51	0.71	0.63	0.57	0.52	0.42	0.62	0.55	0.63	0.72	0.52	0.55	0.63	0.38	0.47	0.53	0.70	0.54	0.70	484.00
AkramNHRSA23	496.29	0.54	0.56	0.57	0.63	0.55	0.62	0.56	0.55	0.57	0.52	0.47	0.57	0.50	0.43	0.63	0.59	0.57	0.59	0.58	0.43	0.58	0.46	484.24
Astrand21	496.03	0.54	0.57	0.53	0.49	0.61	0.61	0.54	0.55	0.51	0.52	0.63	0.55	0.61	0.55	0.56	0.57	0.47	0.62	0.57	0.55	0.66	0.61	483.61
Adelgren2023	492.75	0.52	0.53	0.56	0.54	0.54	0.57	0.55	0.51	0.46	0.54	0.48	0.60	0.57	0.52	0.53	0.56	0.41	0.65	0.53	0.55	0.56	0.51	480.96
AlakaP23	492.48	0.52	0.55	0.51	0.61	0.51	0.63	0.53	0.58	0.67	0.47	0.51	0.45	0.50	0.49	0.45	0.45	0.52	0.51	0.43	0.53	0.49	0.51	481.06
AlesioBNG15	492.08	0.55	0.53	0.51	0.56	0.54	0.60	0.50	0.56	0.66	0.54	0.48	0.58	0.51	0.54	0.53	0.55	0.64	0.56	0.52	0.49	0.56	0.48	480.10
Bocewicz2009	491.41	0.70	0.72	0.54	0.65	0.64	0.59	0.71	0.61	0.59	0.67	0.54	0.74	0.60	0.66	0.55	0.64	0.59	0.54	0.56	0.67	0.58	0.71	477.59
BockmayrP06	491.01	0.70	0.65	0.73	0.70	0.65	0.49	0.62	0.64	0.56	0.63	0.55	0.60	0.54	0.58	0.54	0.59	0.61	0.60	0.55	0.58	0.60	0.58	477.72
Beck99	490.43	0.60	0.62	0.51	0.57	0.62	0.64	0.57	0.60	0.55	0.71	0.59	0.65	0.56	0.60	0.57	0.63	0.50	0.55	0.56	0.60	0.55	0.69	477.39
Beck06	487.89	0.61	0.65	0.57	0.59	0.64	0.63	0.70	0.56	0.40	0.61	0.61	0.65	0.67	0.60	0.67	0.84	0.47	0.49	0.66	0.68	0.64	0.61	474.33
BeckF00a	487.24	0.66	0.61	0.49	0.56	0.64	0.54	0.69	0.56	0.52	0.73	0.49	0.70	0.56	0.60	0.52	0.63	0.52	0.46	0.51	0.64	0.55	0.80	474.26
BeckF98	486.23	0.55	0.62	0.46	0.60	0.61	0.68	0.57	0.58	0.51	0.70	0.59	0.66	0.55	0.55	0.59	0.60	0.42	0.55	0.58	0.63	0.51	0.66	473.46
BeniniLMR11	484.08	0.65	0.66	0.62	0.61	0.65	0.56	0.61	0.64	0.65	0.58	0.57	0.62	0.56	0.63	0.52	0.56	0.58	0.58	0.53	0.56	0.49	0.60	471.05
BenderWS21	483.85	0.68	0.69	0.70	0.68	0.65	0.66	0.74	0.65	0.61	0.56	0.63	0.65	0.53	0.57	0.52	0.63	0.63	0.70	0.59	0.60	0.56	0.58	470.02
Alesio2013	480.89	0.57	0.56	0.52	0.57	0.52	0.55	0.50	0.58	0.57	0.58	0.45	0.64	0.51	0.53	0.52	0.55	0.61	0.57	0.53	0.49	0.56	0.47	468.95
AbreuN22	480.65	0.48	0.58	0.56	0.48	0.59	0.66	0.45	0.58	0.50	0.39	0.62	0.54	0.58	0.50	0.64	0.62	0.41	0.70	0.63	0.55	0.65	0.51	468.43
CarchraeB09	480.50	0.69	0.68	0.71	0.67	0.80	0.70	0.71	0.64	0.53	0.63	0.65	0.73	0.75	0.65	0.71	0.85	0.54	0.61	0.76	0.67	0.62	0.67	465.52
Other		529.28	527.40	516.34	514.86	509.47	509.00	507.31	506.26	507.12	504.23	502.23	496.63	496.70	496.82	497.24	493.32	496.75	495.07	494.22	488.89	489.33	486.33	

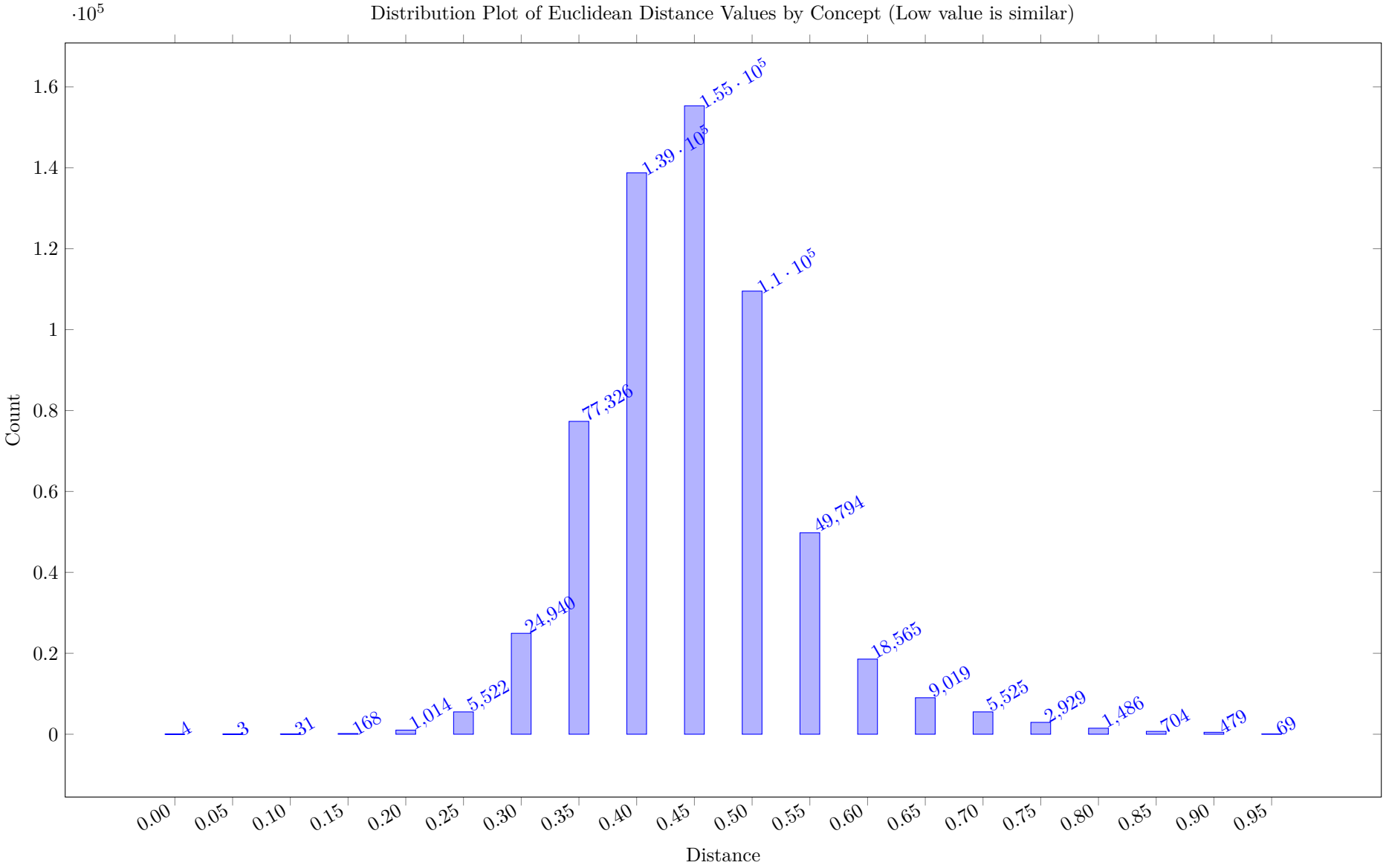

Distribution Plot of Distance Values by References (Low value is similar)
$\cdot 10^5$
Count
Distance
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
0.00
0.05
0.10
0.15
0.20
0.25
0.30
0.35
0.40
0.45
0.50
0.55
0.60
0.65
0.70
0.75
0.80
0.85
0.90
0.95
1.00
4
6
2
3
8
15
9
16
22
41
50
77
109
177
319
572
1,266
2,788
8,727
24,050
$4.63 \cdot 10^5$

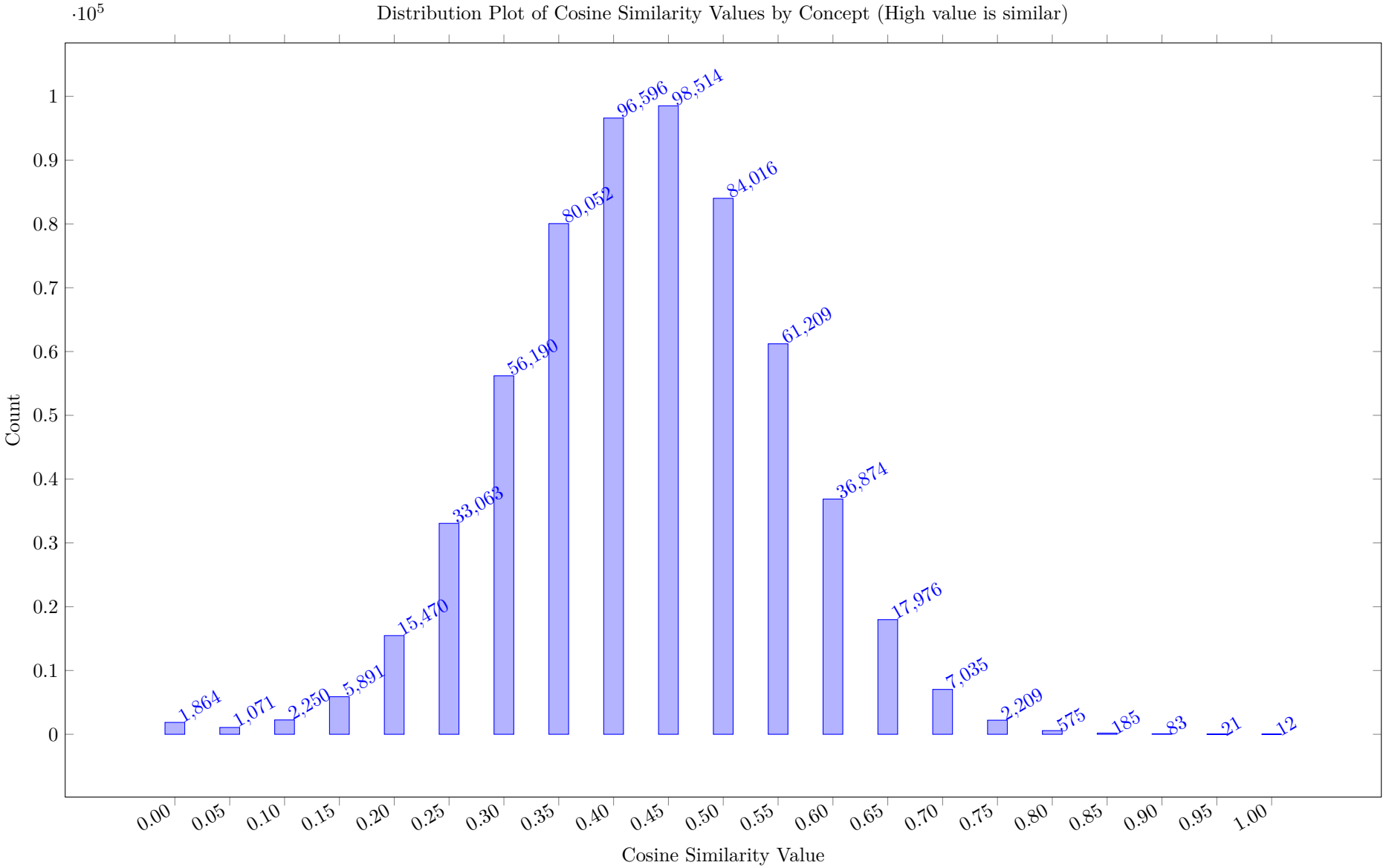

Distribution Plot of Distance Values by Citations (Low value is similar)
$\cdot 10^5$
Count
Distance
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
4
1
1
1
10
1
5
32
19
62
85
133
158
370
621
1,669
5,466
$4.91 \cdot 10^5$
0.00
0.10
0.20
0.30
0.35
0.40
0.45
0.50
0.55
0.60
0.65
0.70
0.75
0.80
0.85
0.90
0.95
1.00

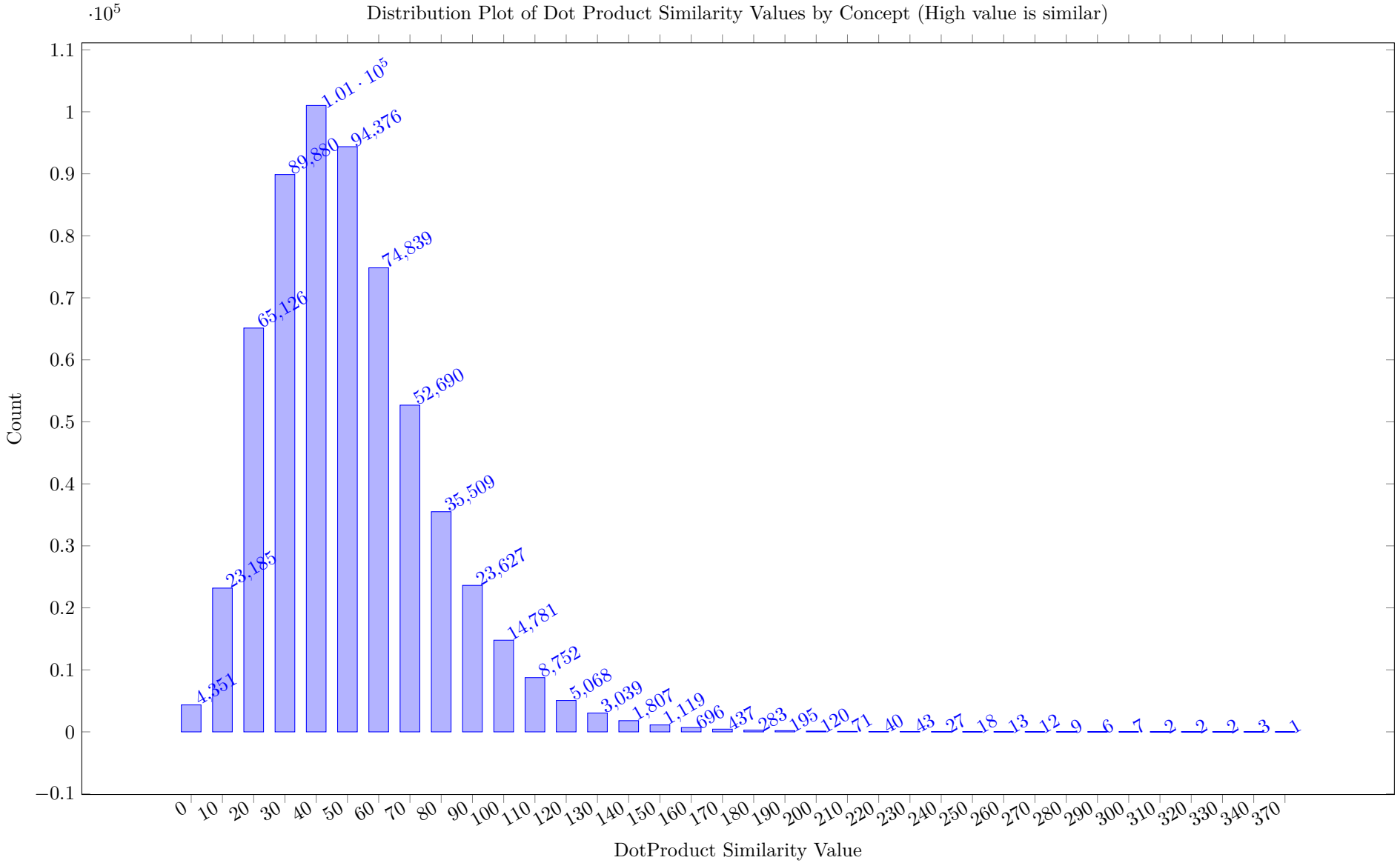


The similarity by concept uses the Euclidean distance between the feature vectors for two works. We translate the MatchLevel for each Concept into a linear

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
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
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
5,522
24,940
77,326
$1.39 \cdot 10^5$
$1.55 \cdot 10^5$
$1.1 \cdot 10^5$
49,794
18,565
9,019
5,525
2,929
1,486
704
479
69

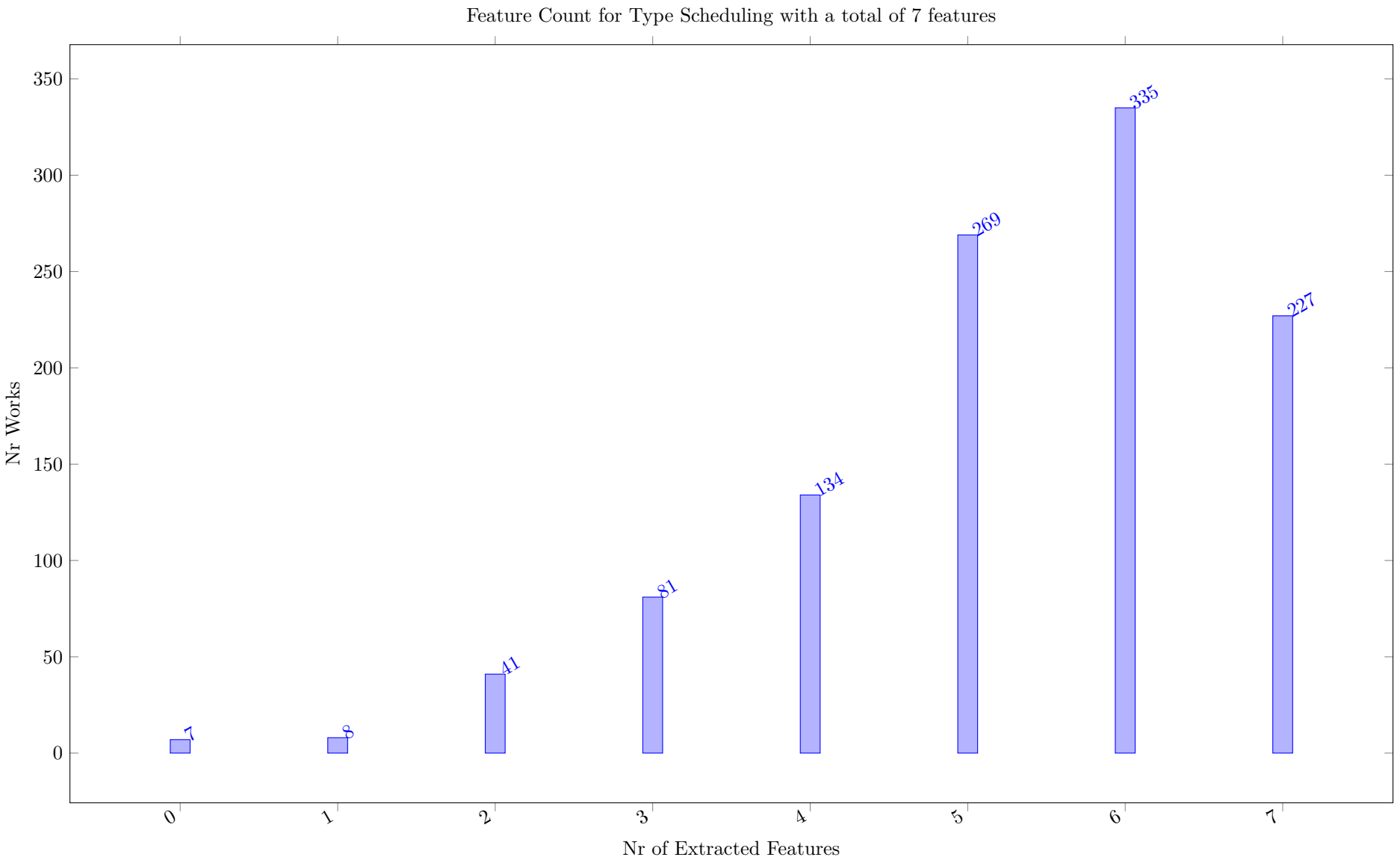

Distribution Plot of Cosine Similarity Values by Concept (High value is similar)
$\cdot 10^5$
Count
Cosine Similarity Value
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
0.00
0.05
0.10
0.15
0.20
0.25
0.30
0.35
0.40
0.45
0.50
0.55
0.60
0.65
0.70
0.75
0.80
0.85
0.90
0.95
1.00
1,864
1,071
2,250
5,891
15,470
33,063
56,190
80,052
96,596
98,514
84,016
61,209
36,874
17,976
7,035
2,209
575
185
83
21
12

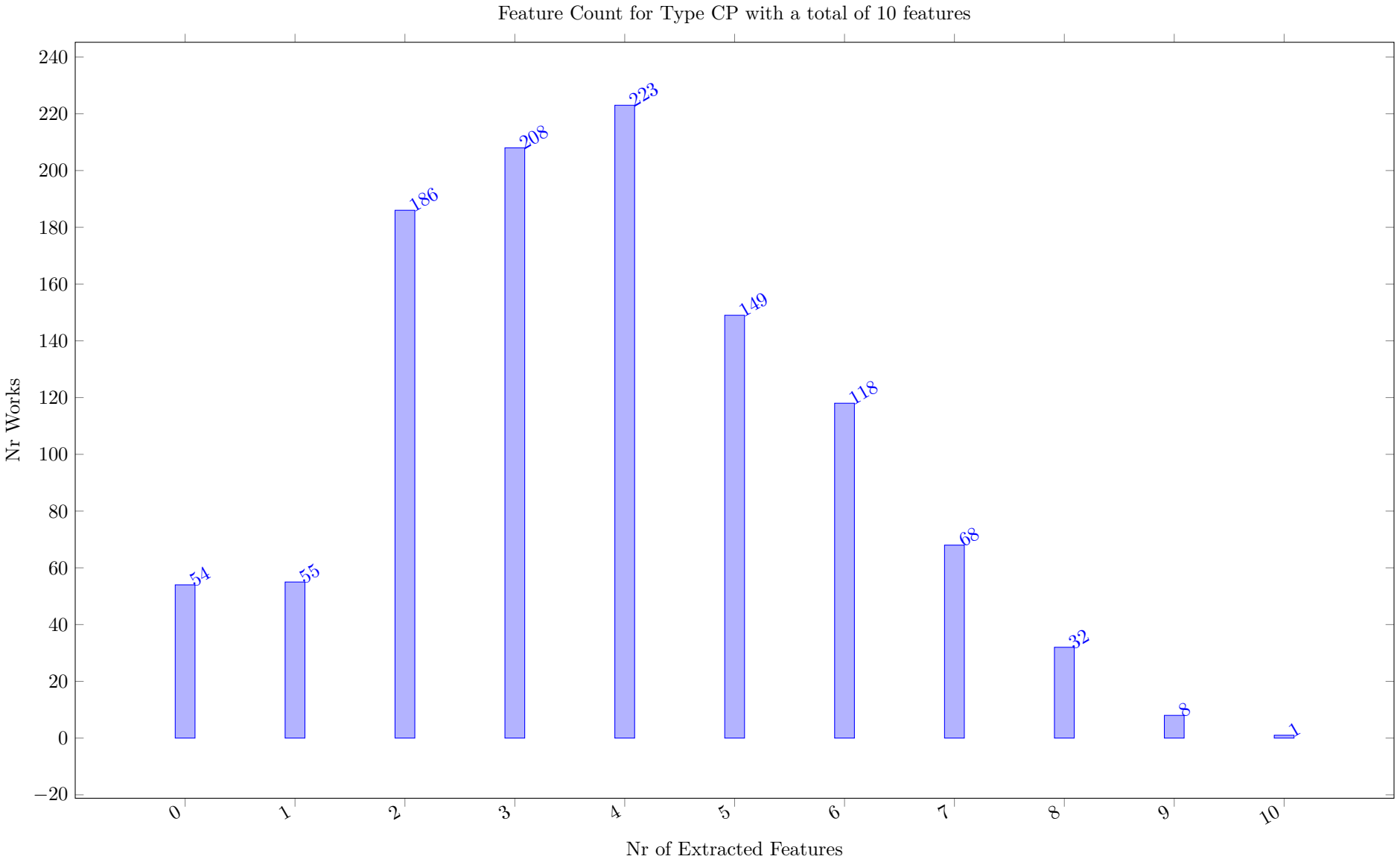

Distribution Plot of Dot Product Similarity Values by Concept (High value is similar)
$\cdot 10^5$
Count
DotProduct Similarity Value
1.1
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
−0.1
4,351
23,185
65,126
89,880
$1.01 \cdot 10^5$
94,376
74,839
52,690
35,509
23,627
14,781
8,752
5,068
3,039
1,807
1,119
696
437
283
195
120
71
40
43
27
18
13
12
9
6
7
2
2
2
3
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

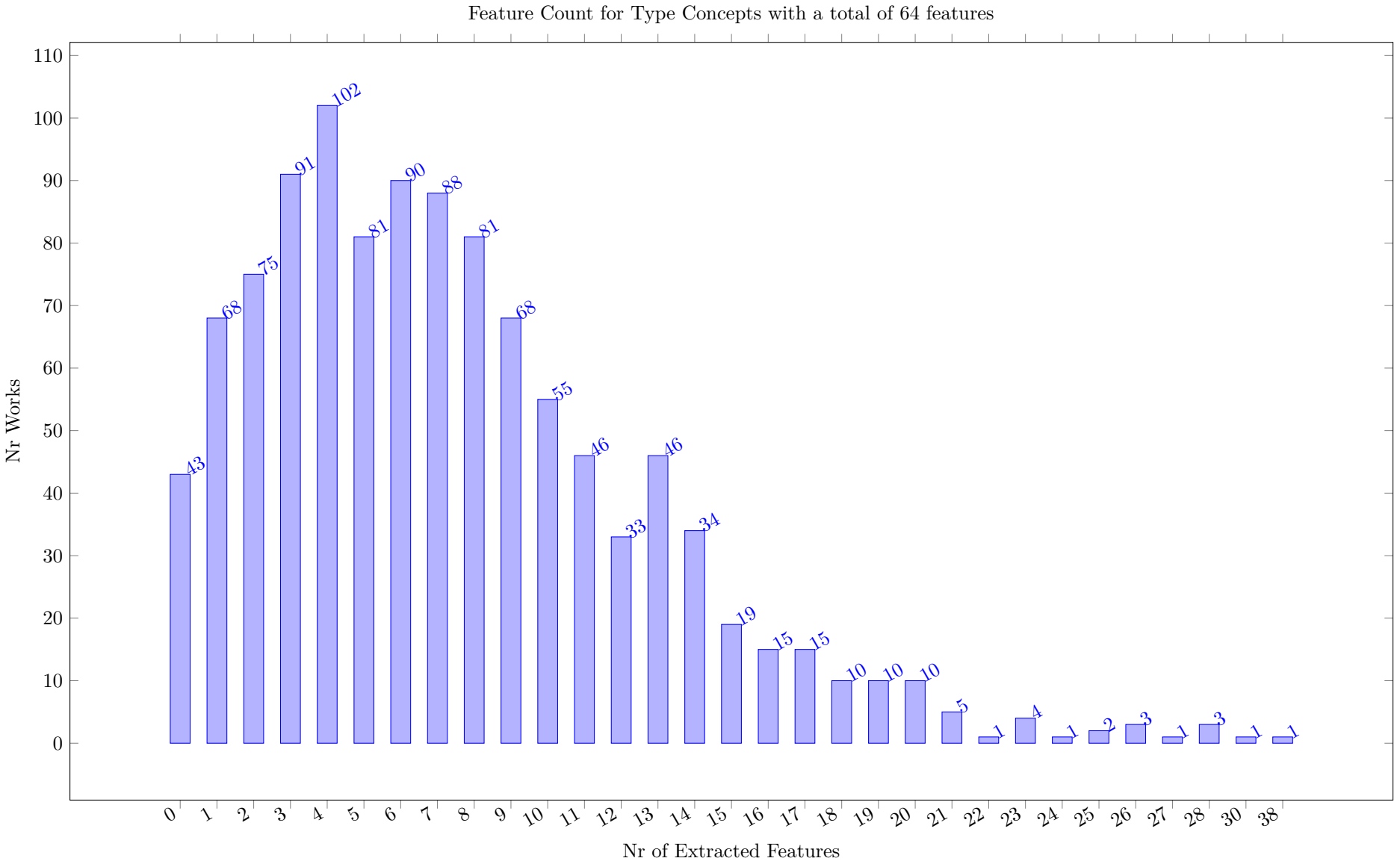
12 Concept Distribution

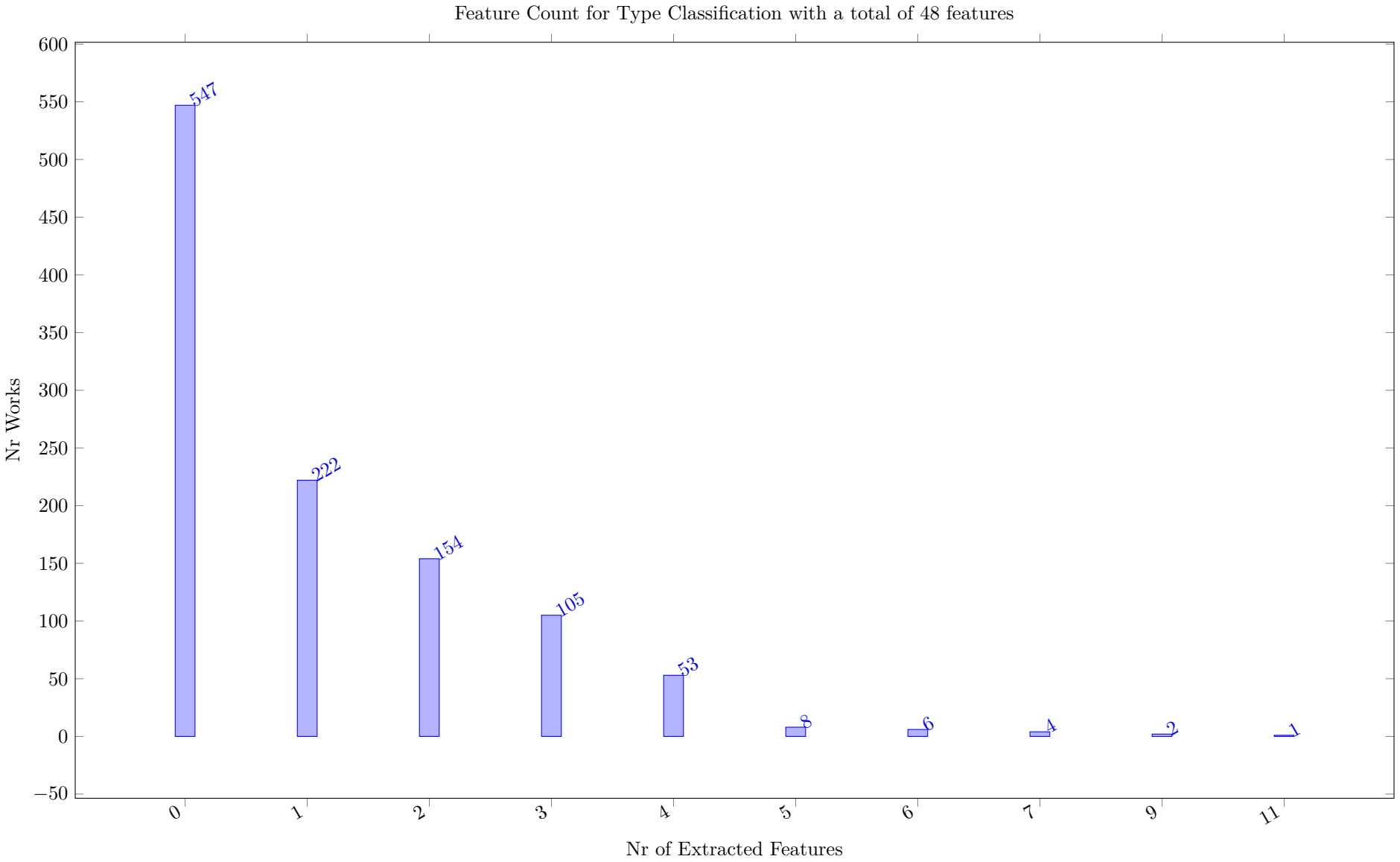
For each concept type, we count how many features are extracted by the individual works that do have a local copy, e.g. for which we can extract features. We can compare the number of features extracted to the number of concepts of a given type, which is stated in the title of the diagram.

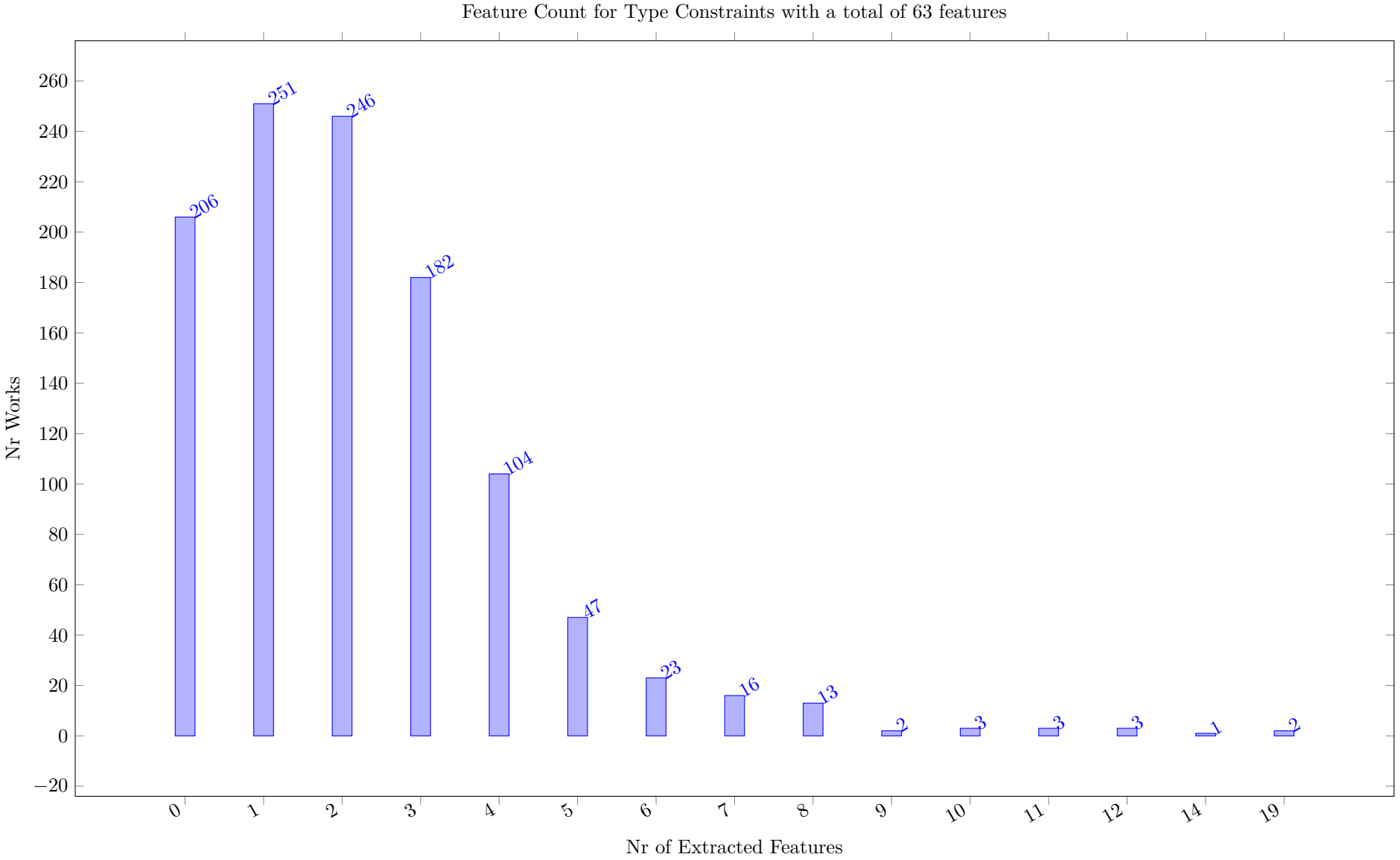
A high count indicates that a work covers many of the concepts of the given type, a low count might mean that our ontology does not have relevant concepts for that work.

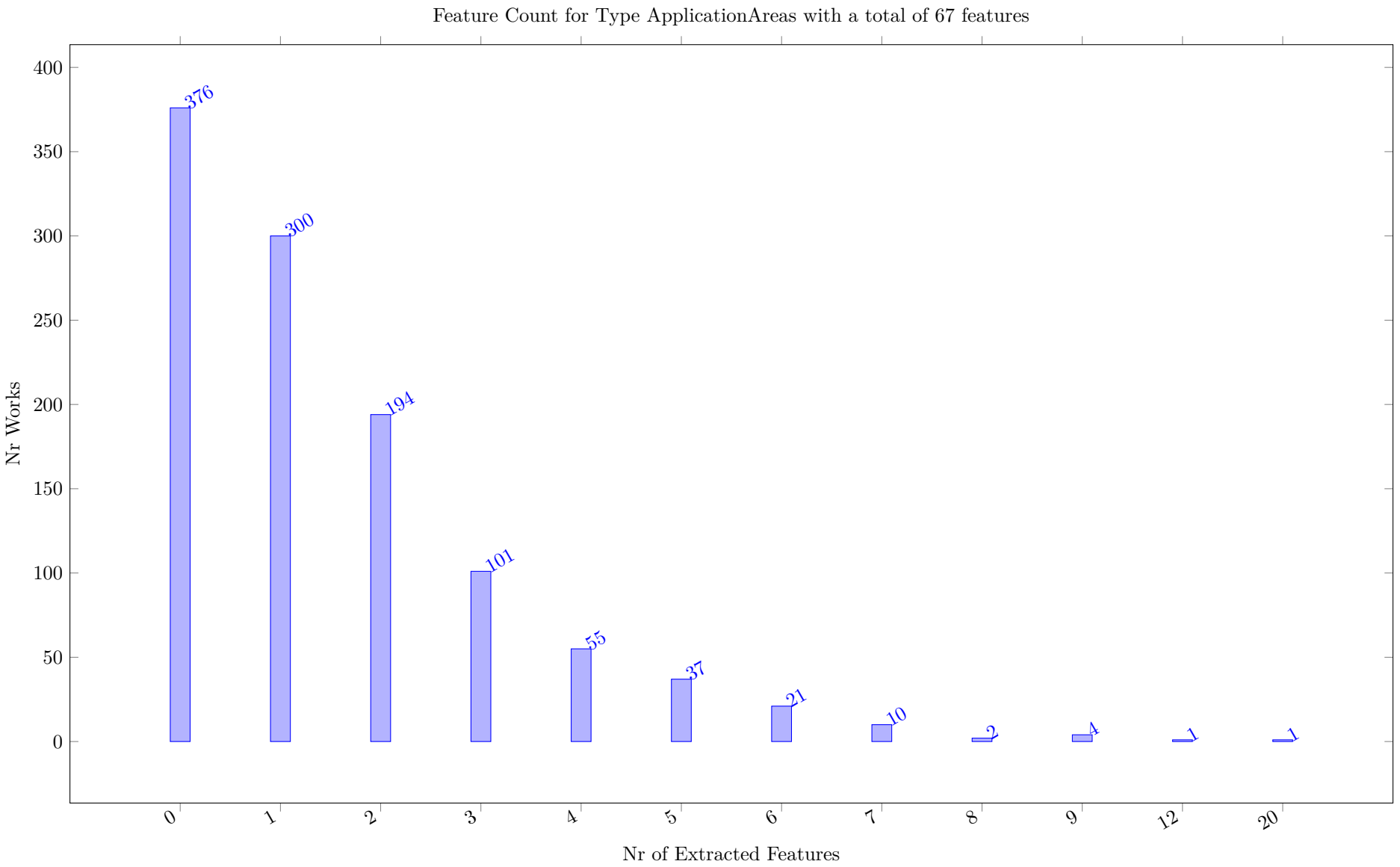

Feature Count for Type Scheduling with a total of 7 features
Nr Works
Nr of Extracted Features
0
50
100
150
200
250
300
350
0
1
2
3
4
5
6
7
7
8
41
81
134
269
335
227

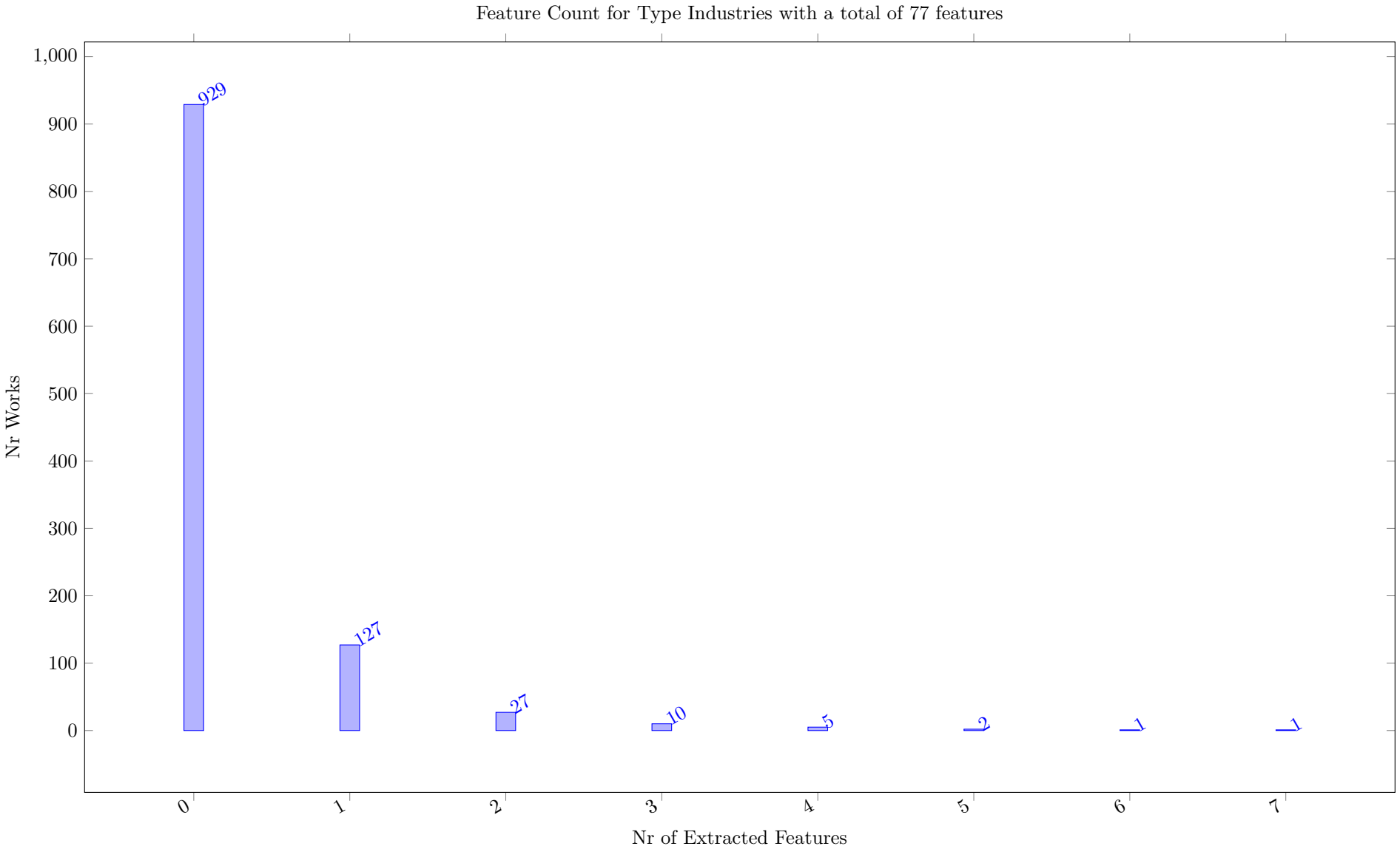

Feature Count for Type CP with a total of 10 features
Nr Works
240
220
200
180
160
140
120
100
80
60
40
20
0
−20
54
55
186
208
223
149
118
68
32
8
1
0
1
2
3
4
5
6
7
8
9
10
Nr of Extracted Features

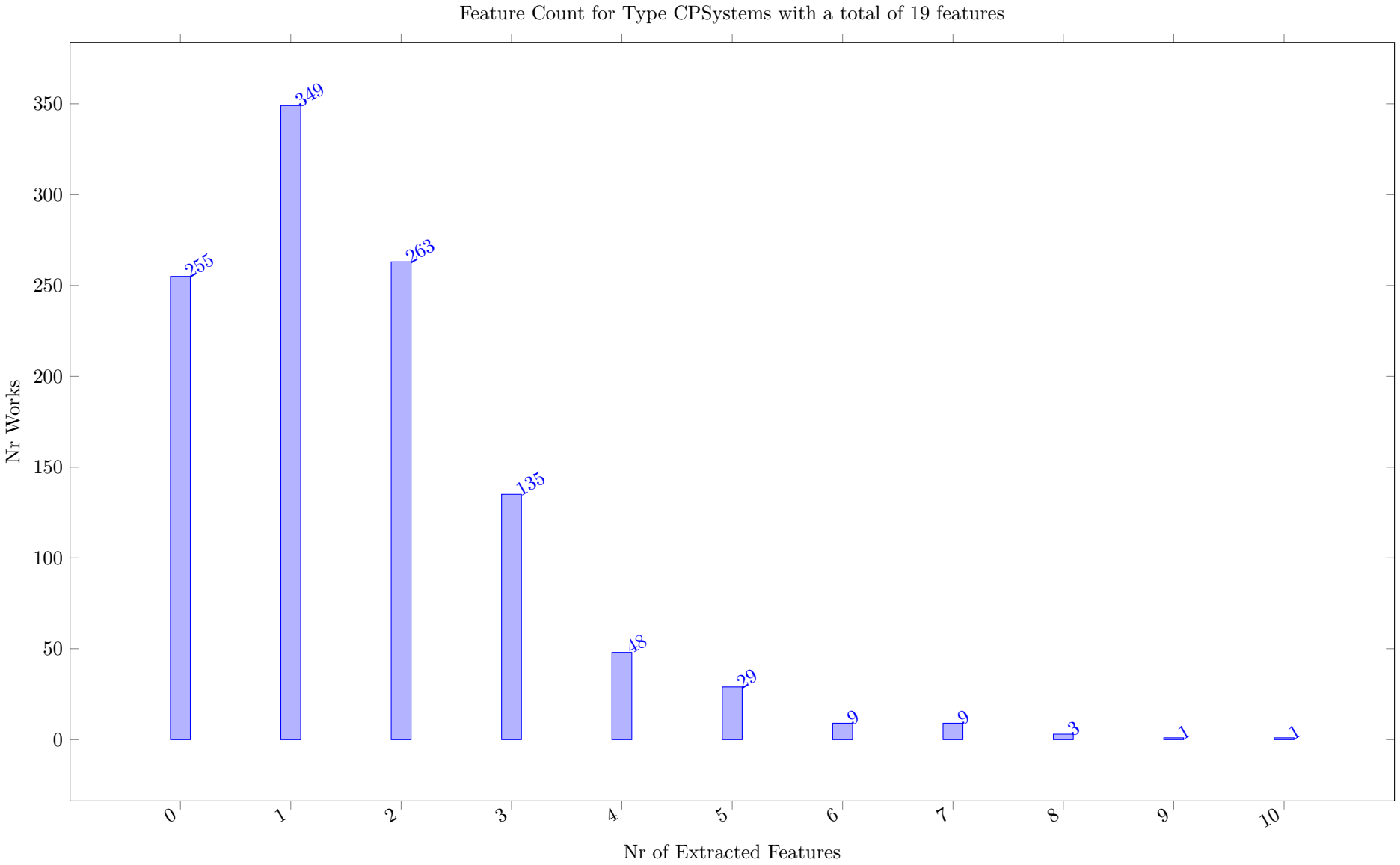

Feature Count for Type Concepts with a total of 64 features
Nr Works
Nr of Extracted Features
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 30 38
43 68 75 91 102 81 90 88 81 68 55 46 33 46 34 19 15 15 10 10 10 5 1 4 1 2 3 1 3 1 1

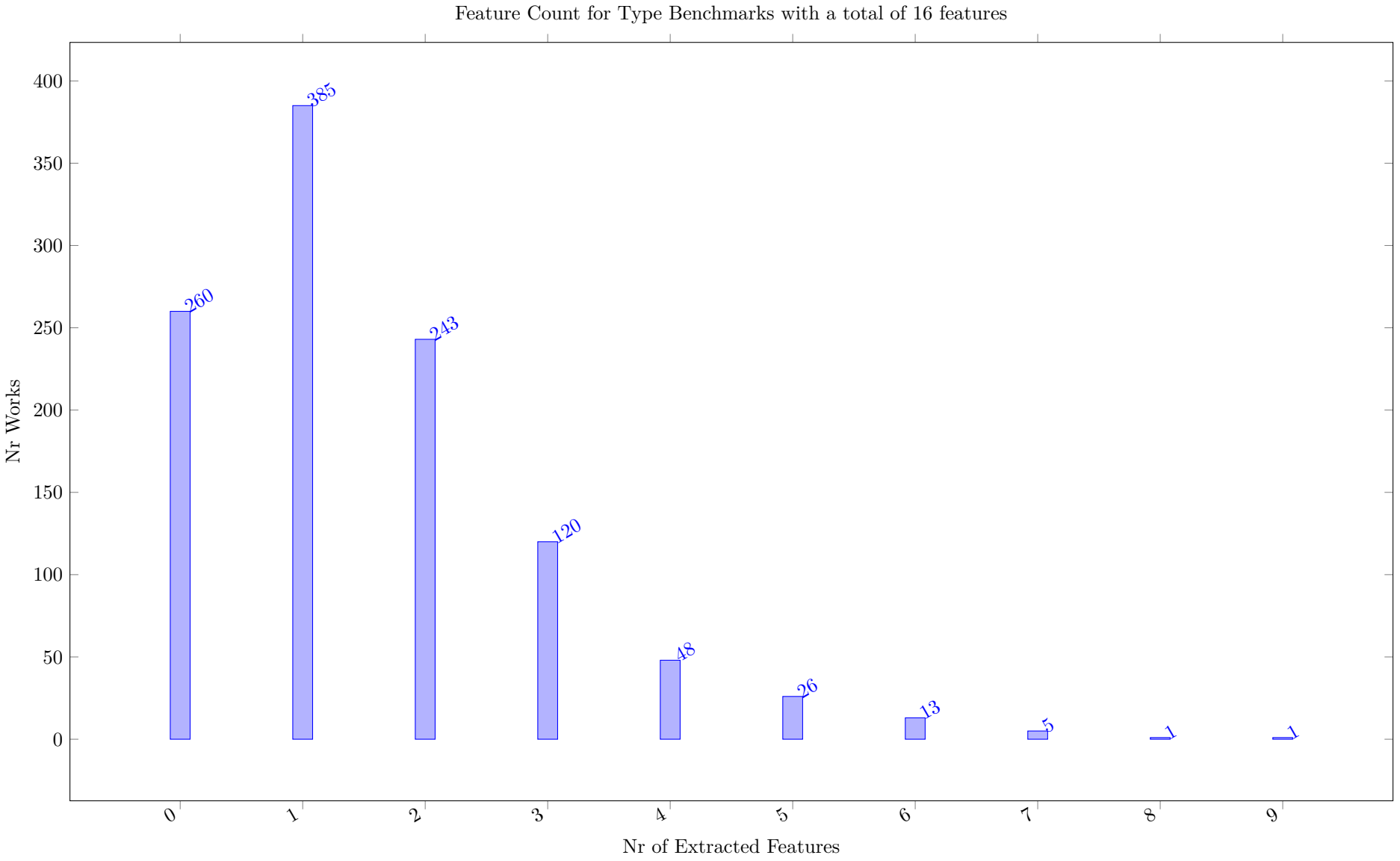

Feature Count for Type Classification with a total of 48 features
Nr Works
600
550
500
450
400
350
300
250
200
150
100
50
0
−50
547
222
154
105
53
8
6
4
2
1
0
1
2
3
4
5
6
7
9
11
Nr of Extracted Features

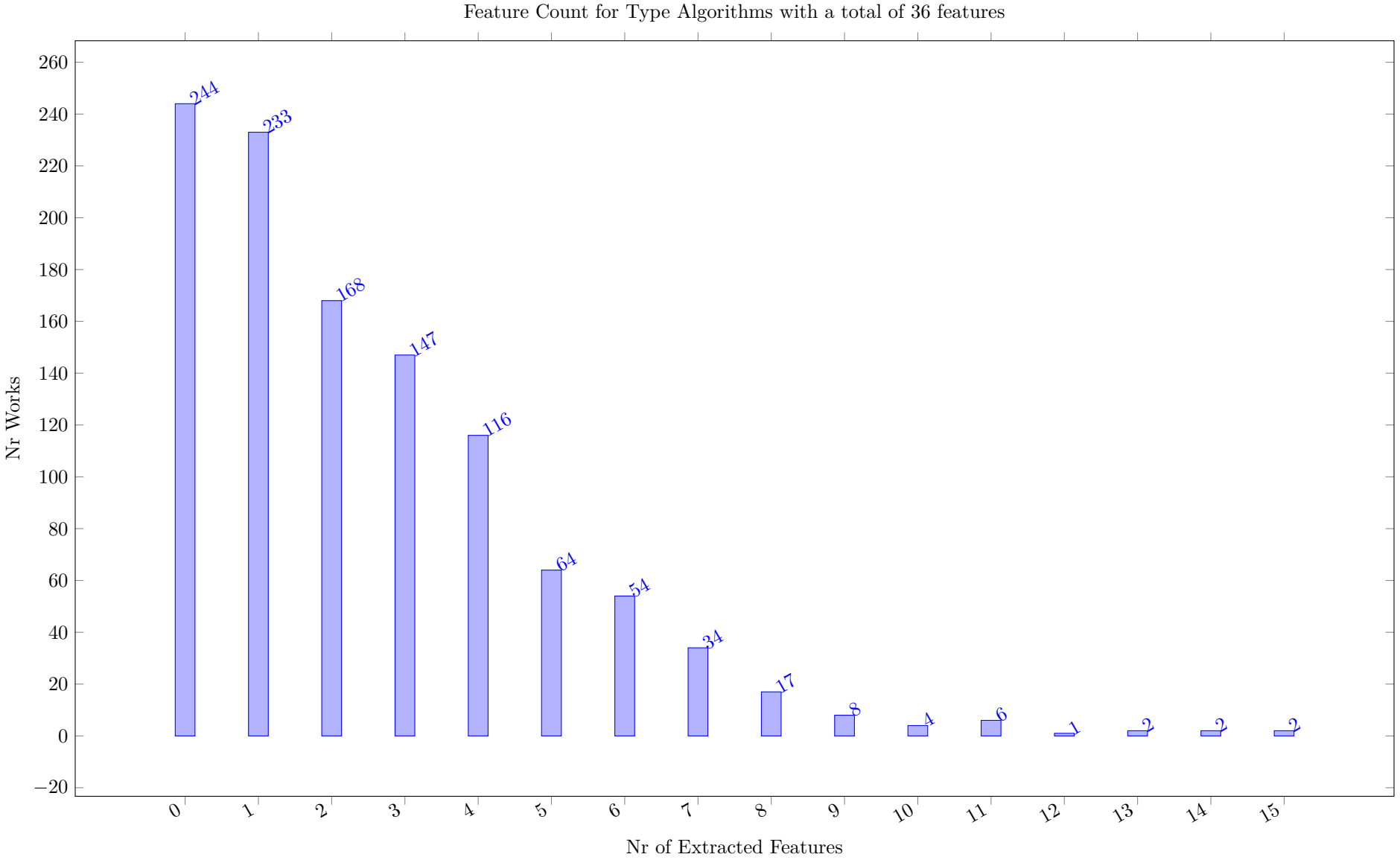

Feature Count for Type Constraints with a total of 63 features
Nr Works
Nr of Extracted Features
260
240
220
200
180
160
140
120
100
80
60
40
20
0
−20
206
251
246
182
104
47
23
16
13
2
3
3
3
1
2
0
1
2
3
4
5
6
7
8
9
10
11
12
14
19


Feature Count for Type ApplicationAreas with a total of 67 features
Nr Works
400
350
300
250
200
150
100
50
0
376
300
194
101
55
37
21
10
2
4
1
1
0
1
2
3
4
5
6
7
8
9
12
20
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
929
127
27
10
5
2
1
1
0
1
2
3
4
5
6
7
Nr of Extracted Features


Feature Count for Type CPSystems with a total of 19 features
Nr Works
0
50
100
150
200
250
300
350
255
349
263
135
48
29
9
9
3
1
1
0
1
2
3
4
5
6
7
8
9
10
Nr of Extracted Features


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
385
243
120
48
26
13
5
1
1

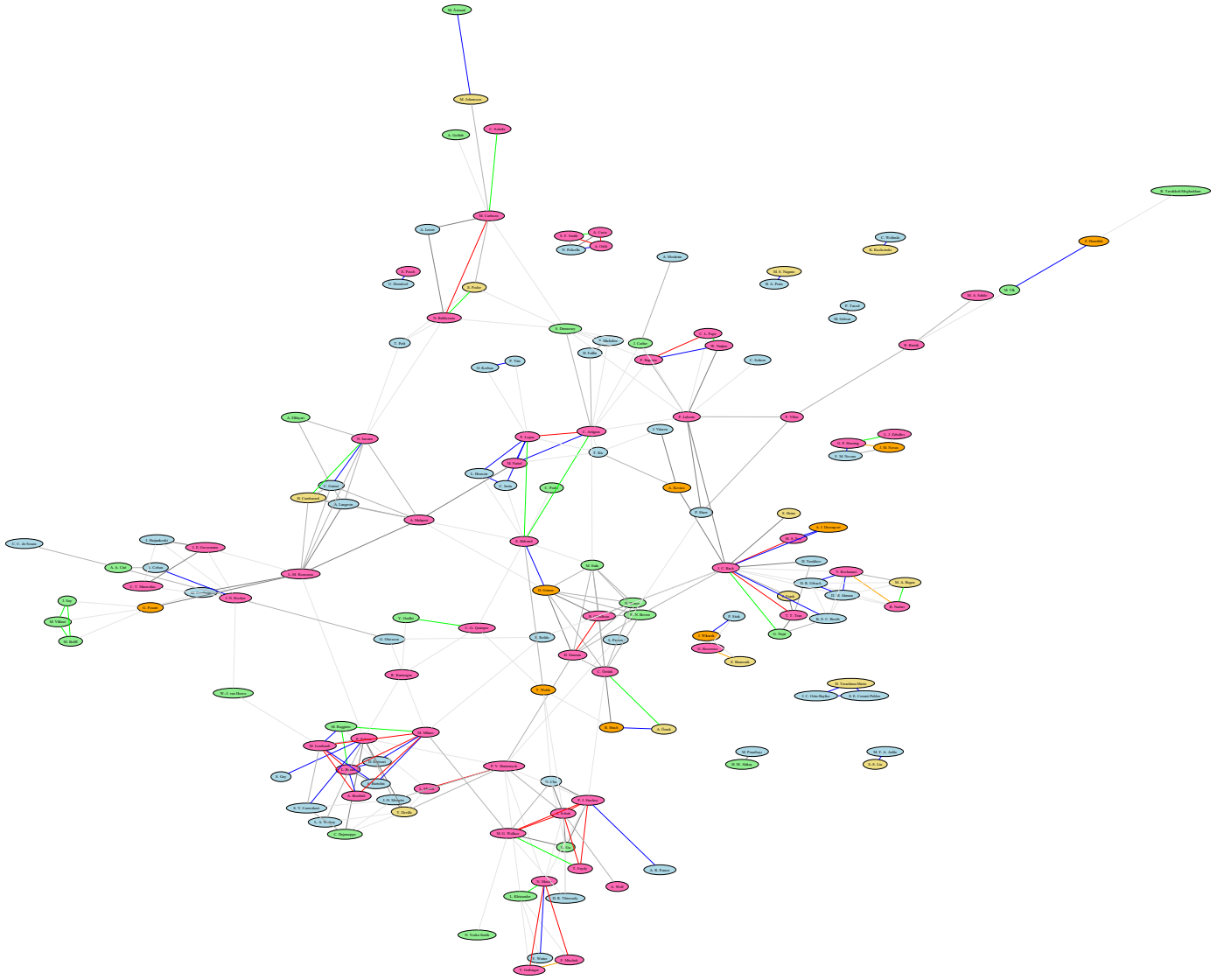

Feature Count for Type Algorithms with a total of 36 features
Nr Works
Nr of Extracted Features
260
240
220
200
180
160
140
120
100
80
60
40
20
0
−20
244
233
168
147
116
64
54
34
17
8
4
6
1
2
2
2
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15

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.

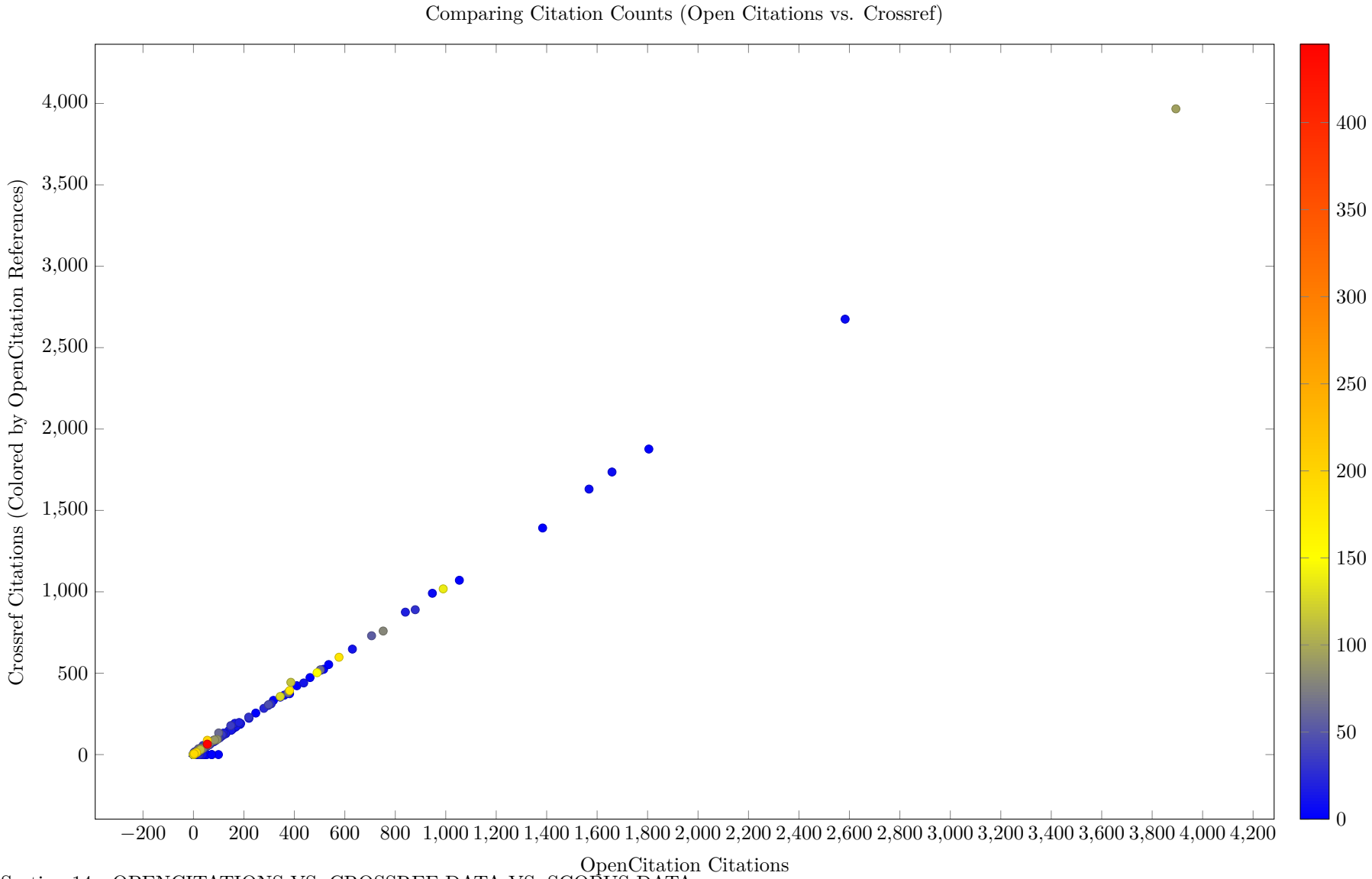
The plots can be made with different layout tools in graphviz, it seems that fdp produces the most consistent visually attractive plots for this type of display. This probably needs more work on parameter settings to be fully automated.

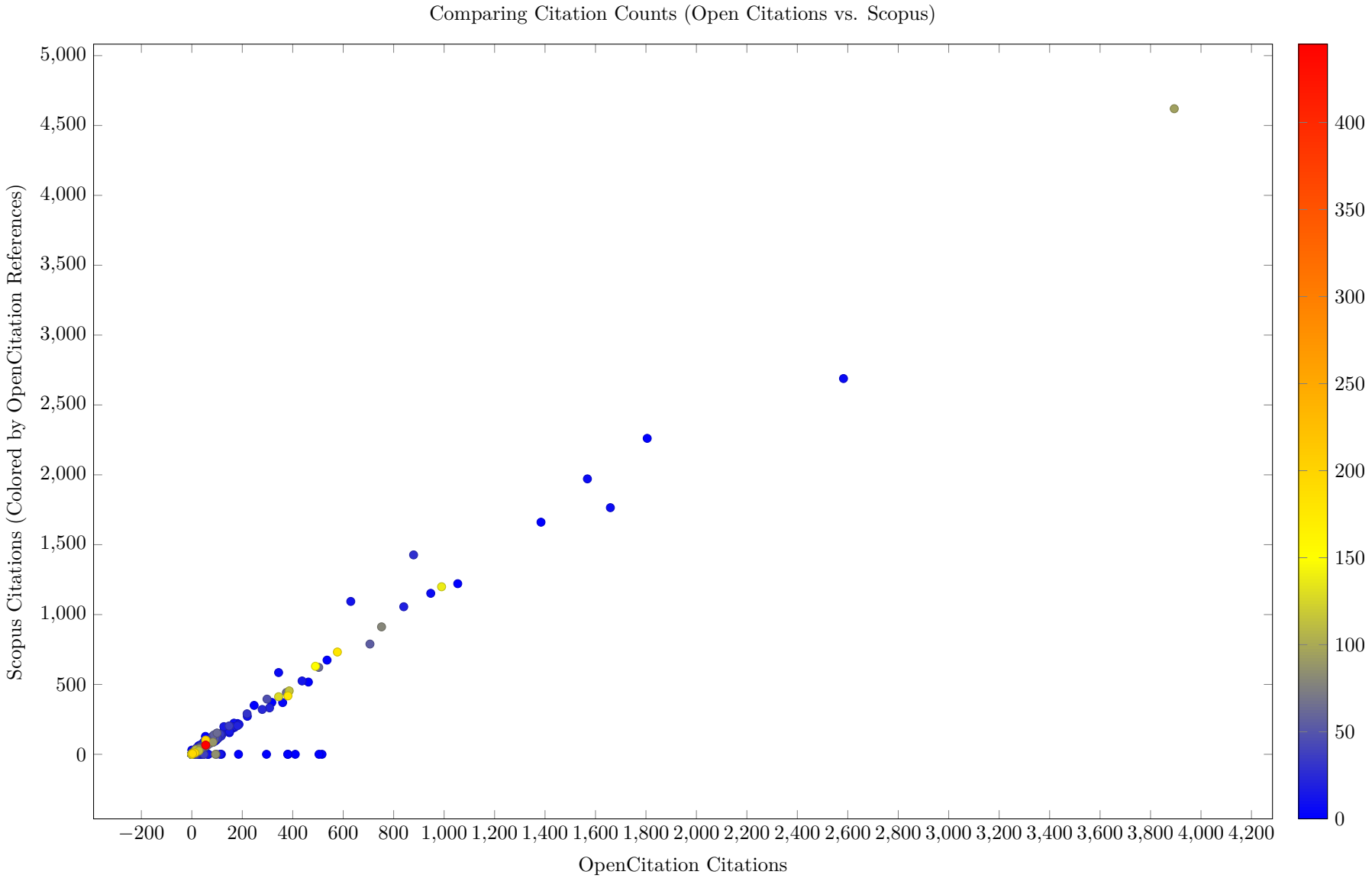
Figure 1: Coauthor Graph Drawn with fdp (Graphviz, CoauthorLimit = 4)

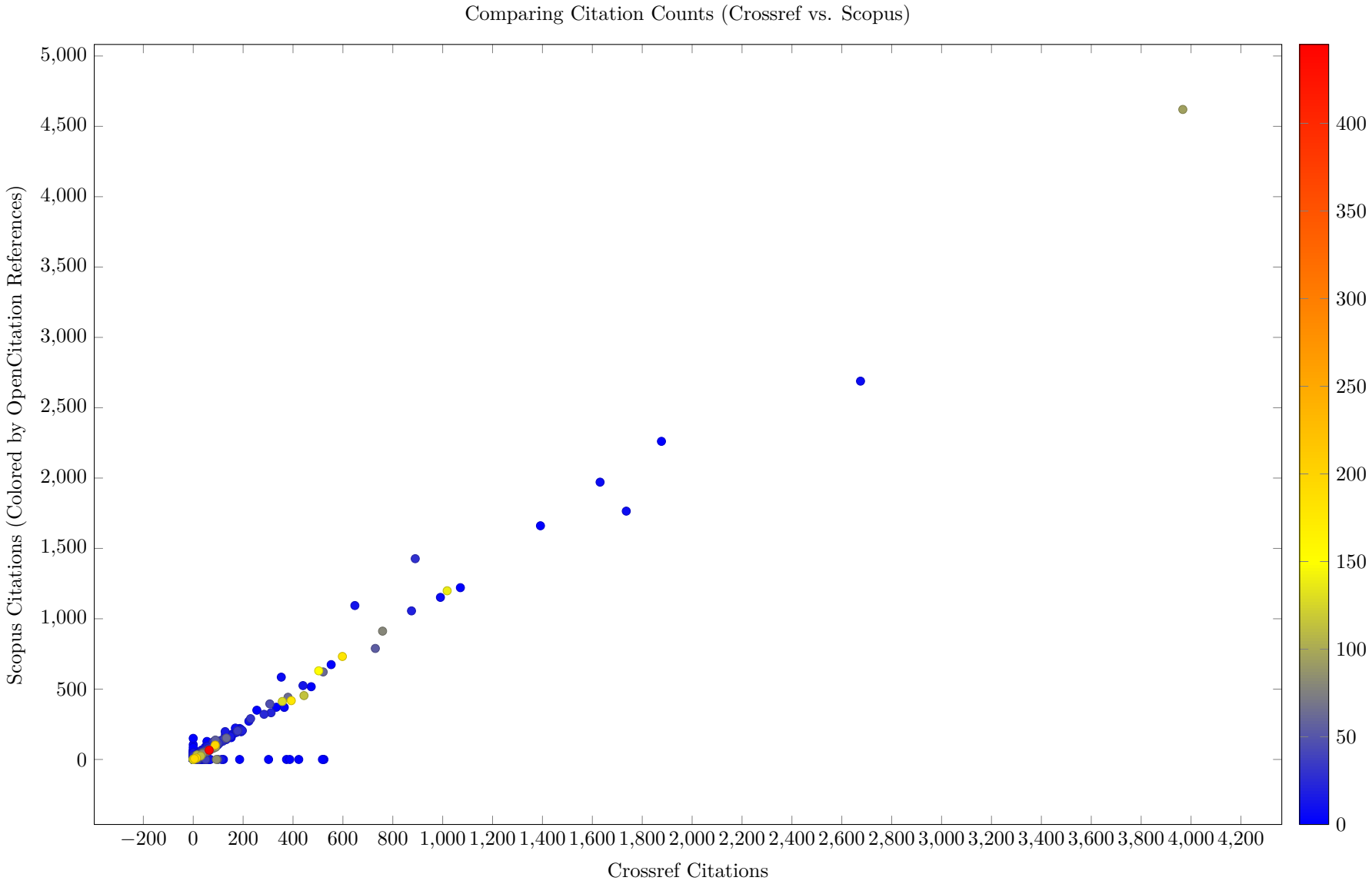


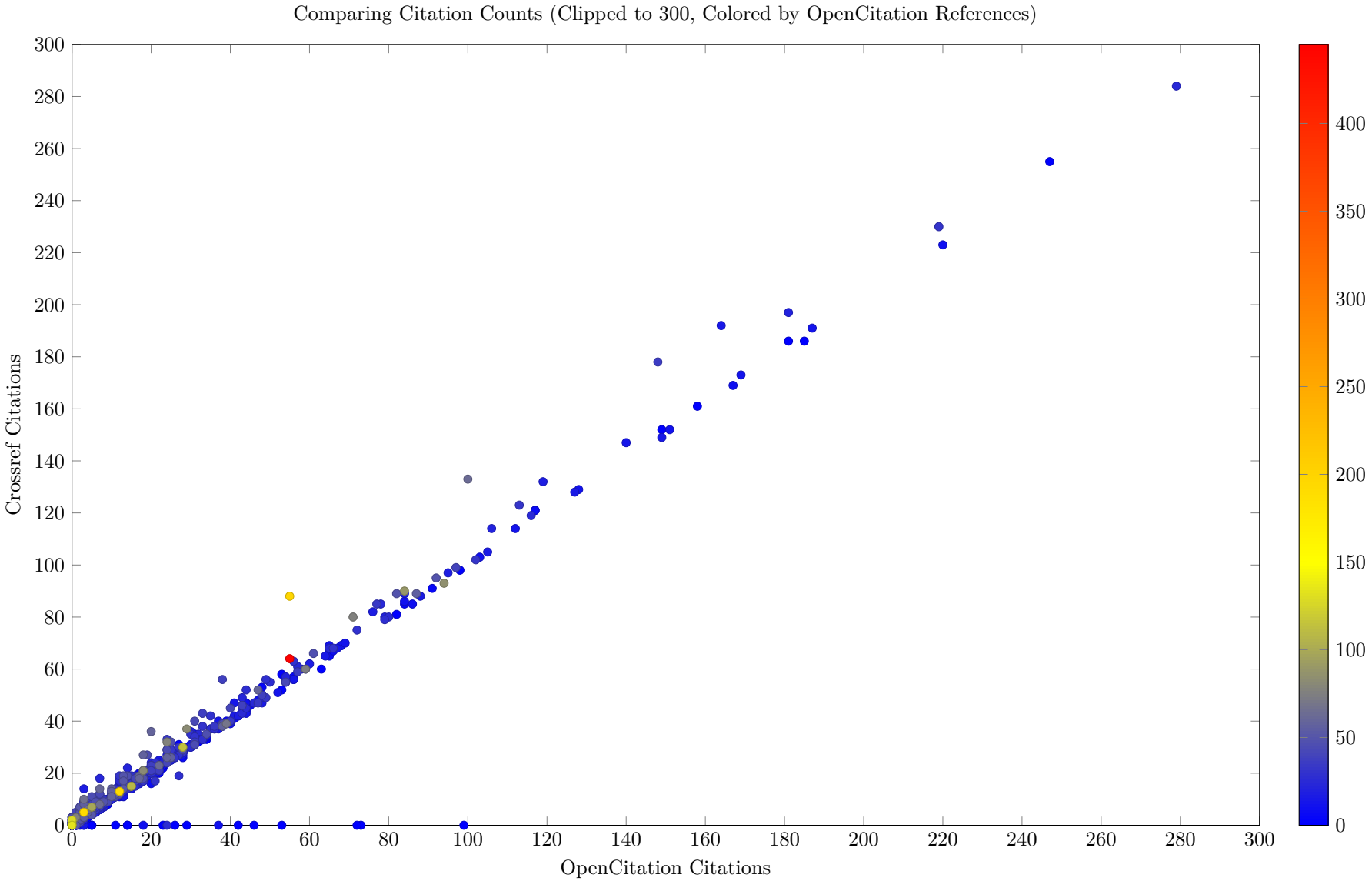
14 OpenCitations vs. Crossref Data vs. Scopus Data

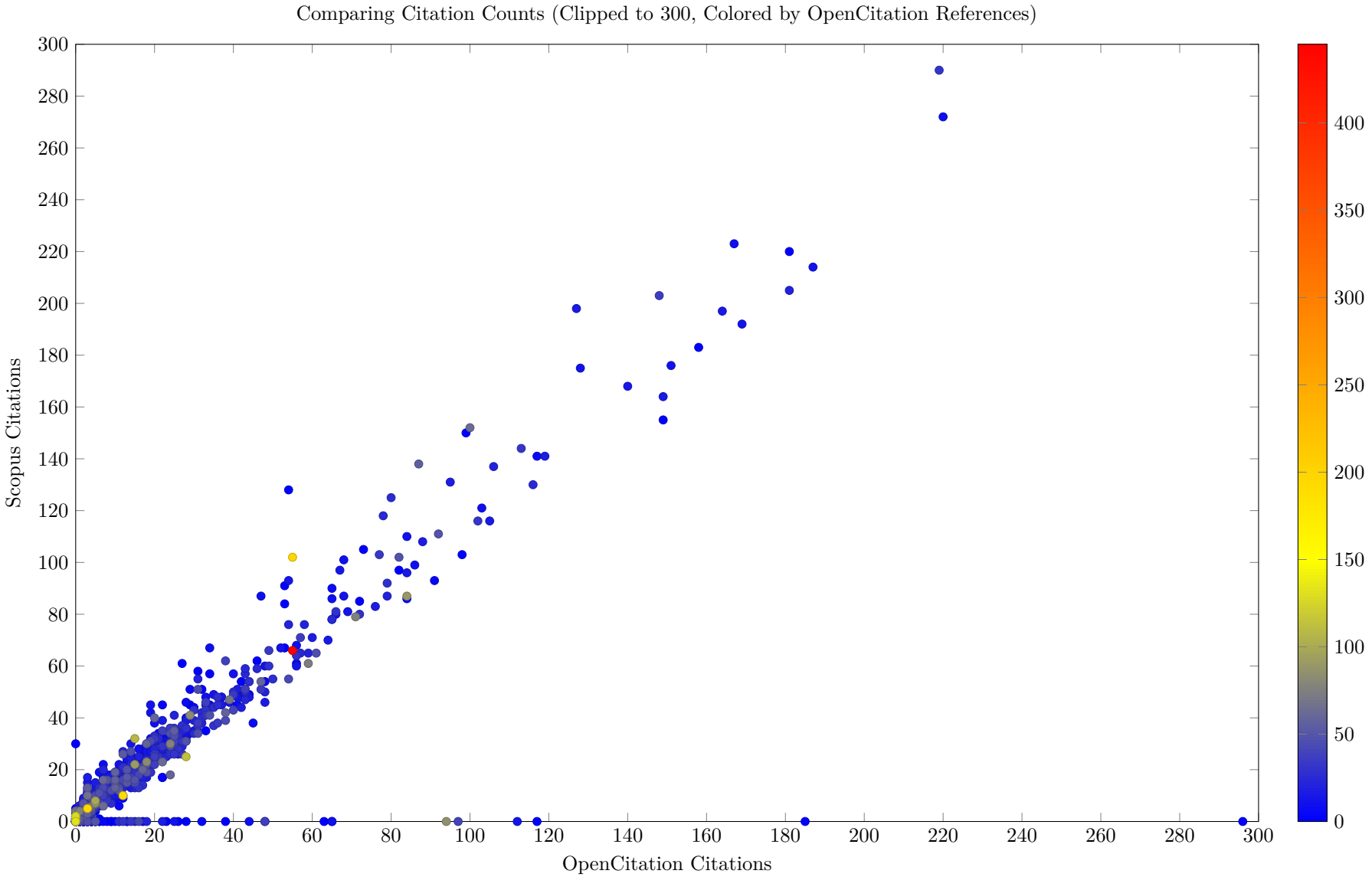
14.1 Citation Comparison

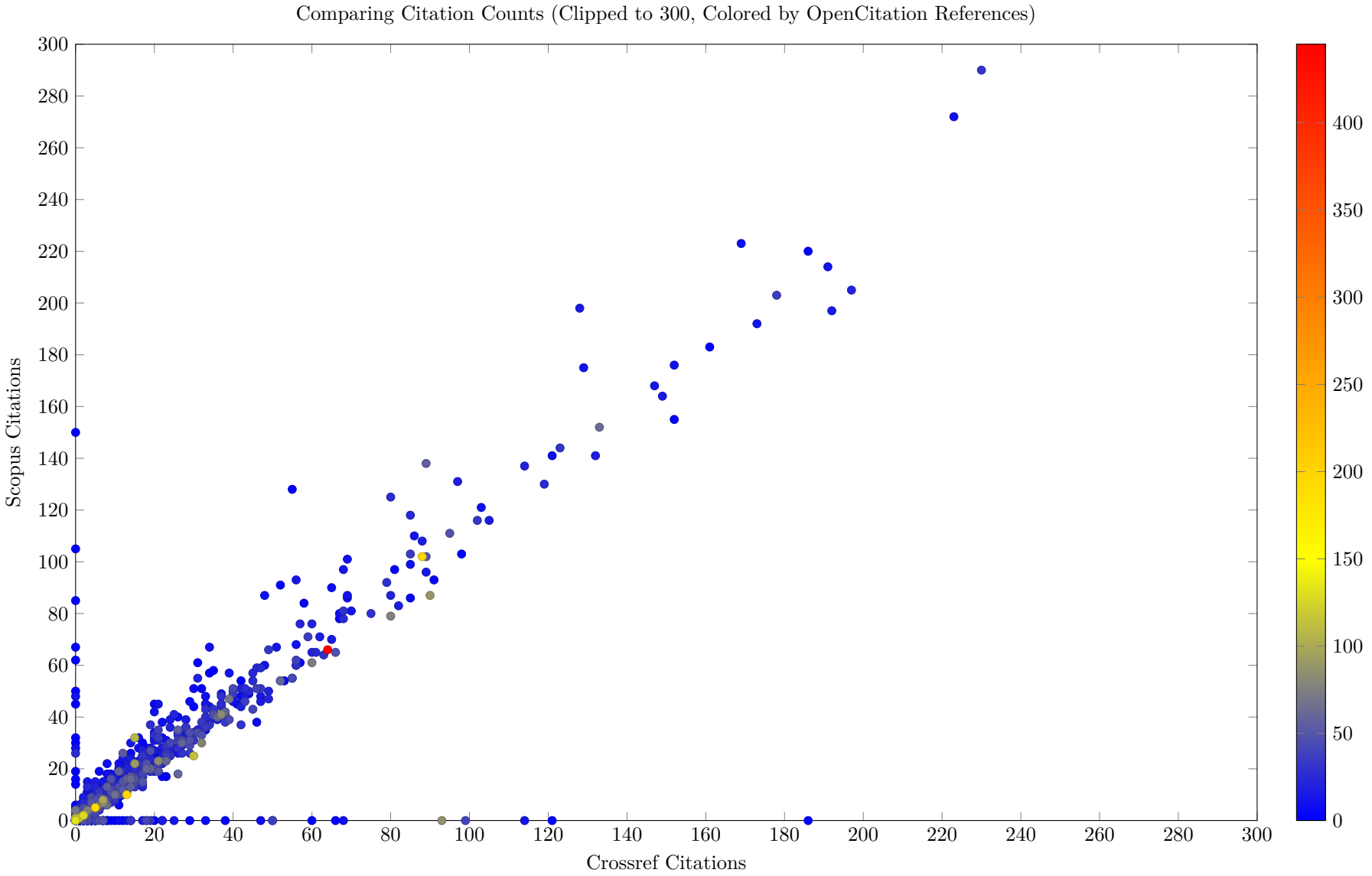



Comparing Citation Counts (Open Citations vs. Scopus)
Scopus Citations (Colored by OpenCitation References)
5,000
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
−200 0 200 400 600 800 1,000 1,200 1,400 1,600 1,800 2,000 2,200 2,400 2,600 2,800 3,000 3,200 3,400 3,600 3,800 4,000 4,200
OpenCitation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

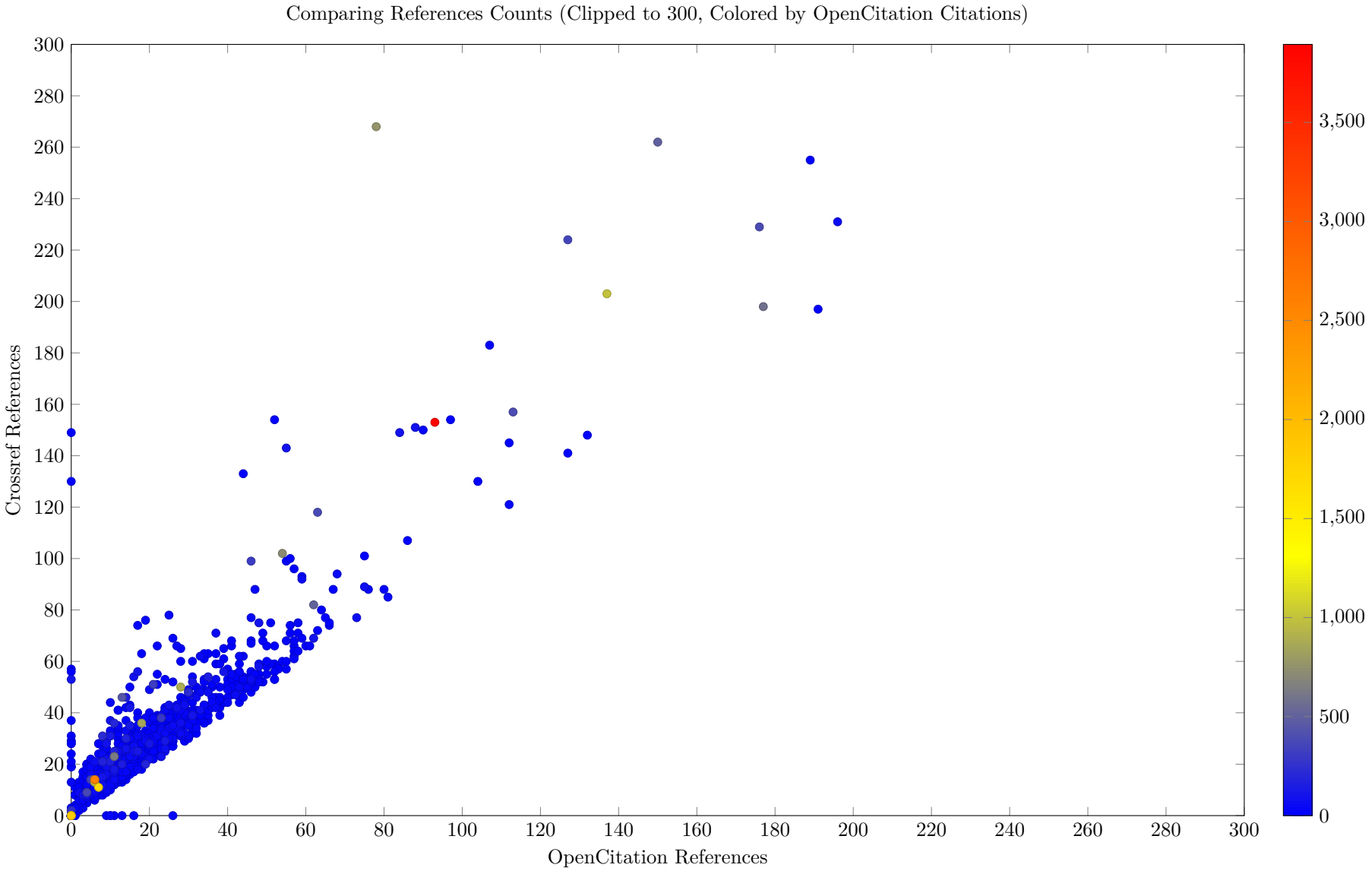

Comparing Citation Counts (Crossref vs. Scopus)
Scopus Citations (Colored by OpenCitation References)
5,000
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
−200 0 200 400 600 800 1,000 1,200 1,400 1,600 1,800 2,000 2,200 2,400 2,600 2,800 3,000 3,200 3,400 3,600 3,800 4,000 4,200
Crossref Citations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

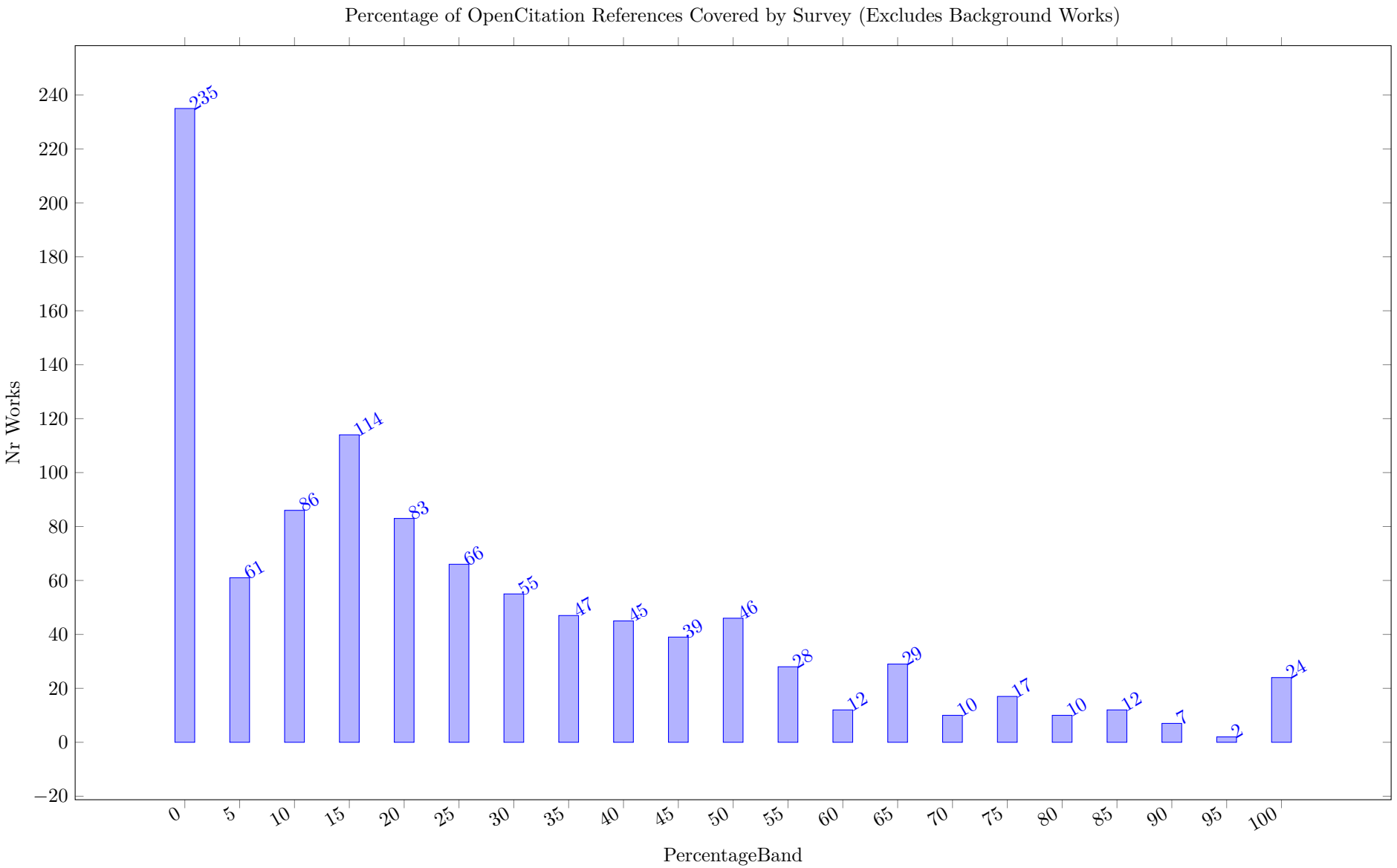

Comparing Citation Counts (Clipped to 300, Colored by OpenCitation References)
Scopus Citations
OpenCitation Citations
0
20
40
60
80
100
120
140
160
180
200
220
240
260
280
300
0
50
100
150
200
250
300
350
400

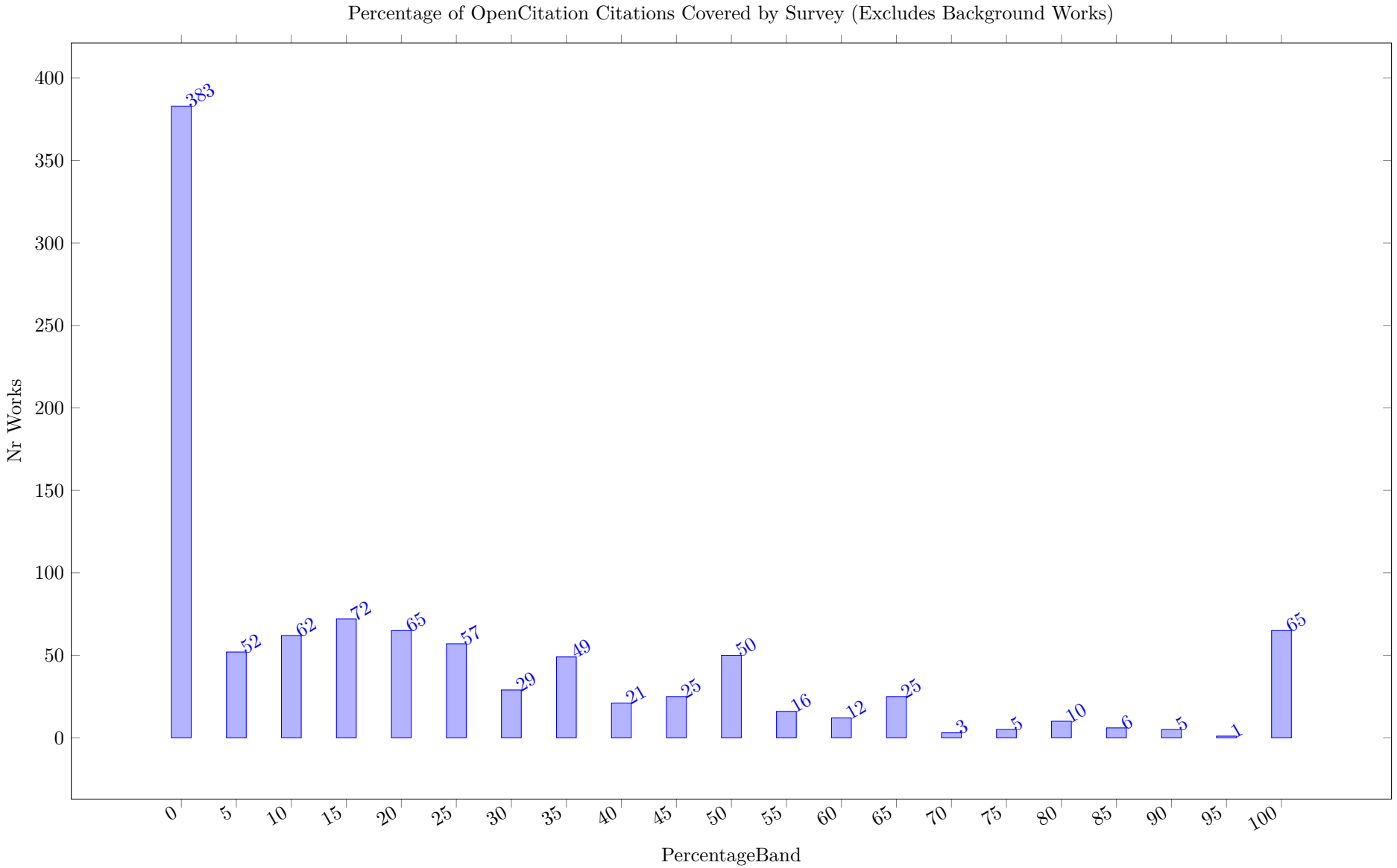

Comparing Citation Counts (Clipped to 300, Colored by OpenCitation References)
Scopus Citations
Crossref Citations
0
20
40
60
80
100
120
140
160
180
200
220
240
260
280
300
0
50
100
150
200
250
300
350
400

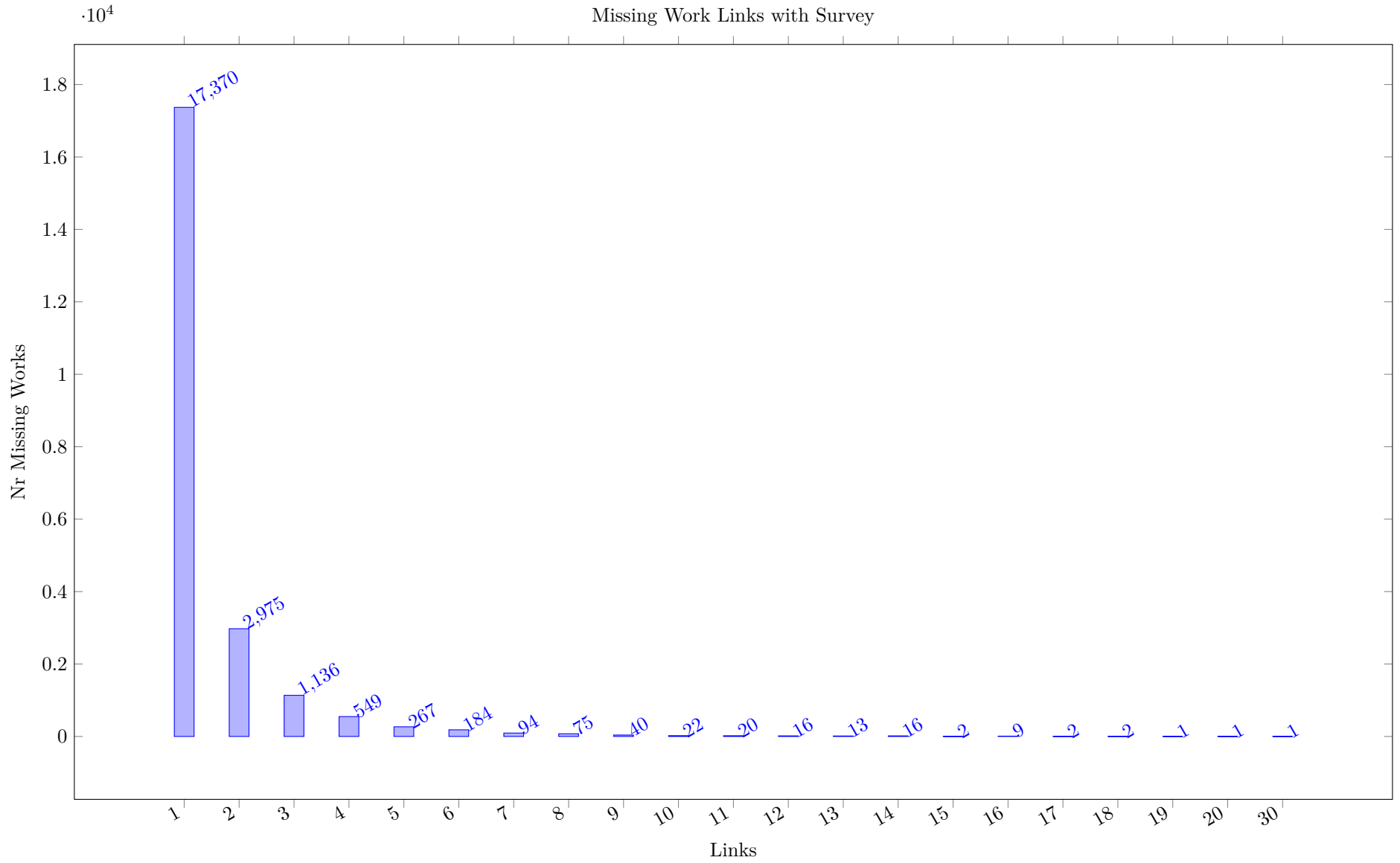
14.2 References Comparison



14.3 Percentage Cover




Percentage of OpenCitation Citations Covered by Survey (Excludes Background Works)
Nr Works
PercentageBand
0
50
100
150
200
250
300
350
400
0
5
10
15
20
25
30
35
40
45
50
55
60
65
70
75
80
85
90
95
100
383
52
62
72
65
57
29
49
21
25
50
16
12
25
3
5
10
6
5
1
65


Missing Work Links with Survey
$\cdot 10^4$
Nr Missing Works
Links
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
17,370
2,975
1,136
549
267
184
94
75
40
22
20
16
13
16
2
9
2
2
1
1
1
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
30

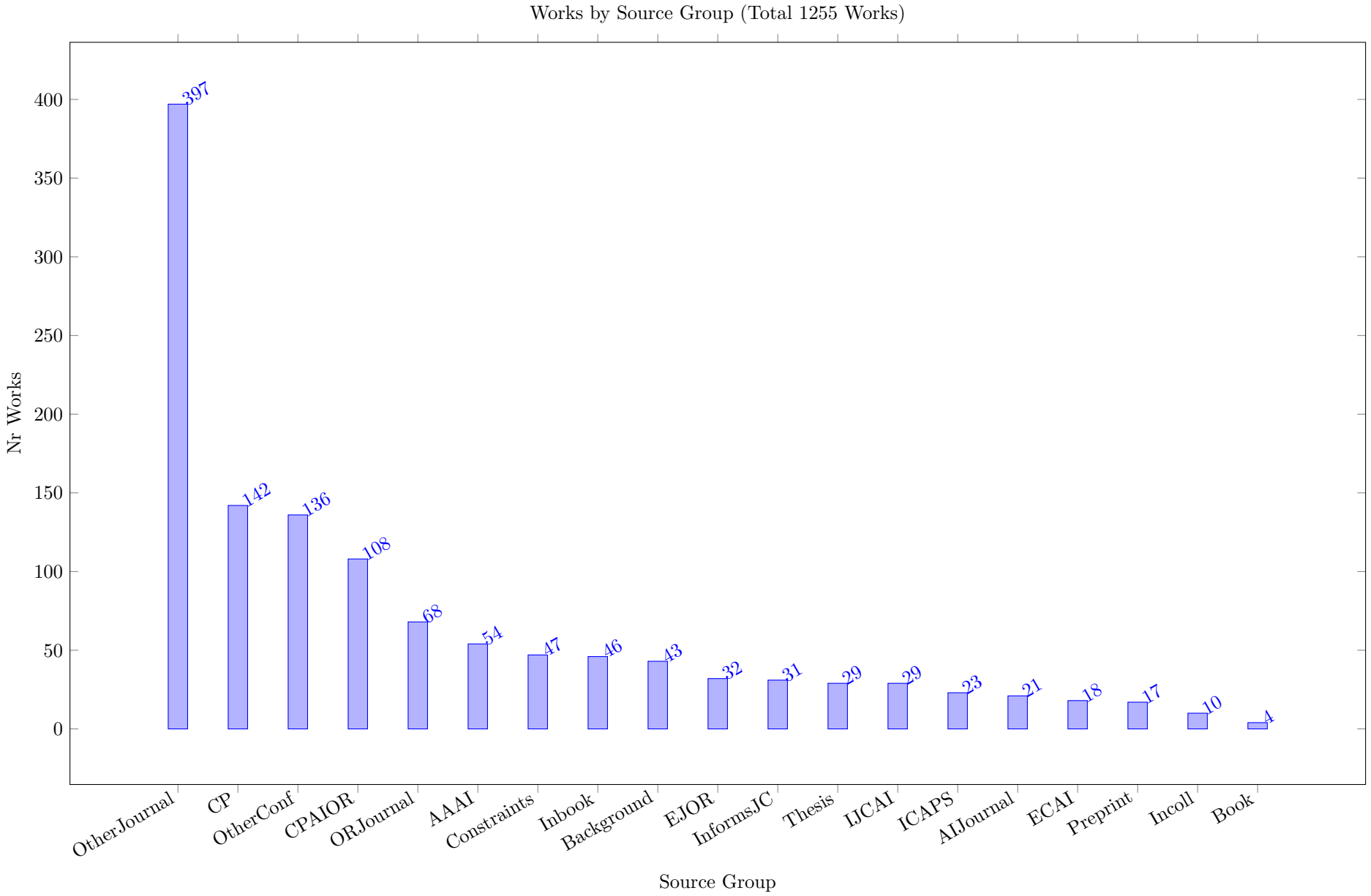
15 Citations by Year and Source Group

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

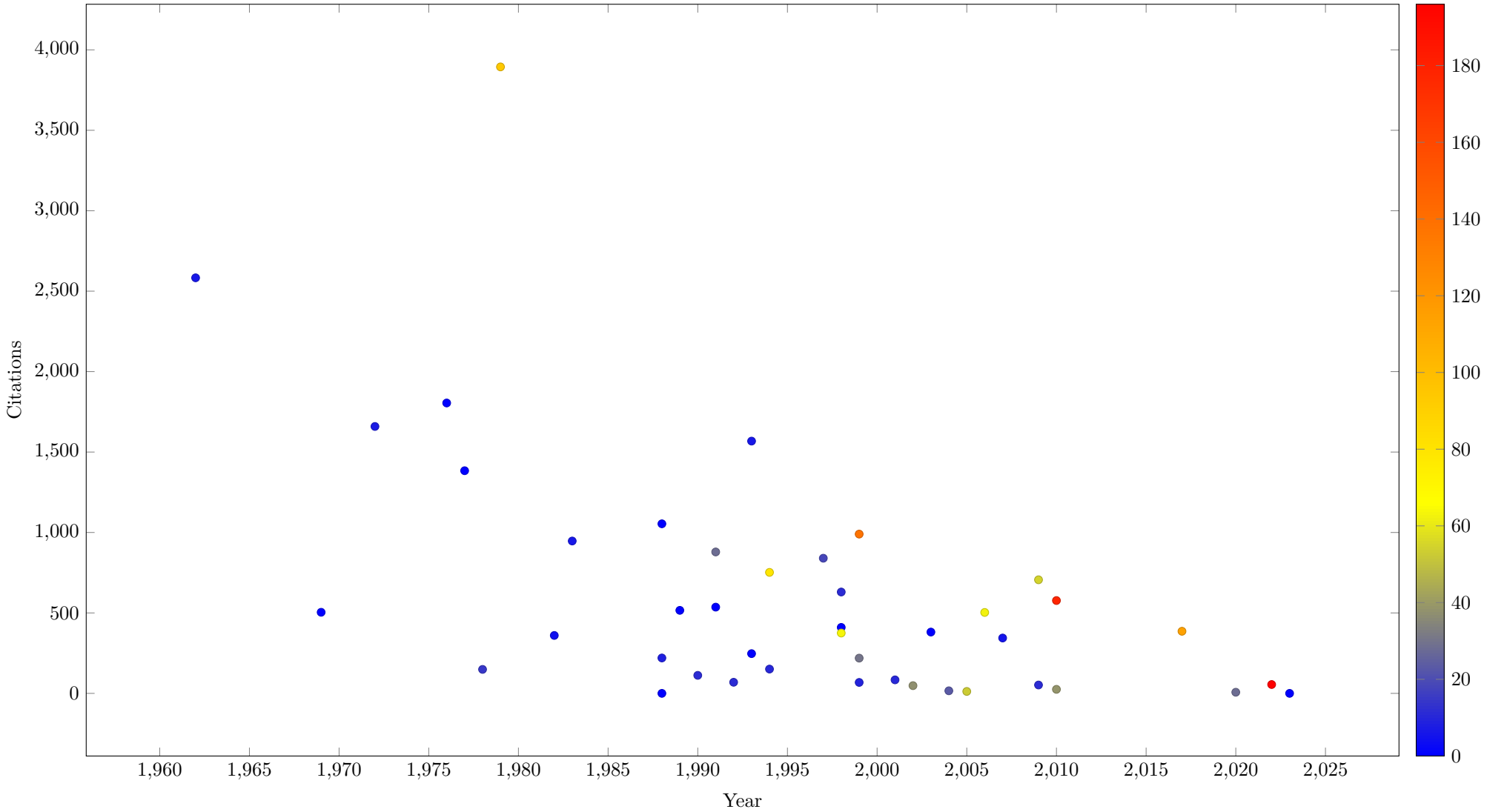
The first plot in this section shows how many works in each source group have been published. This considers the complete time period of the survey.

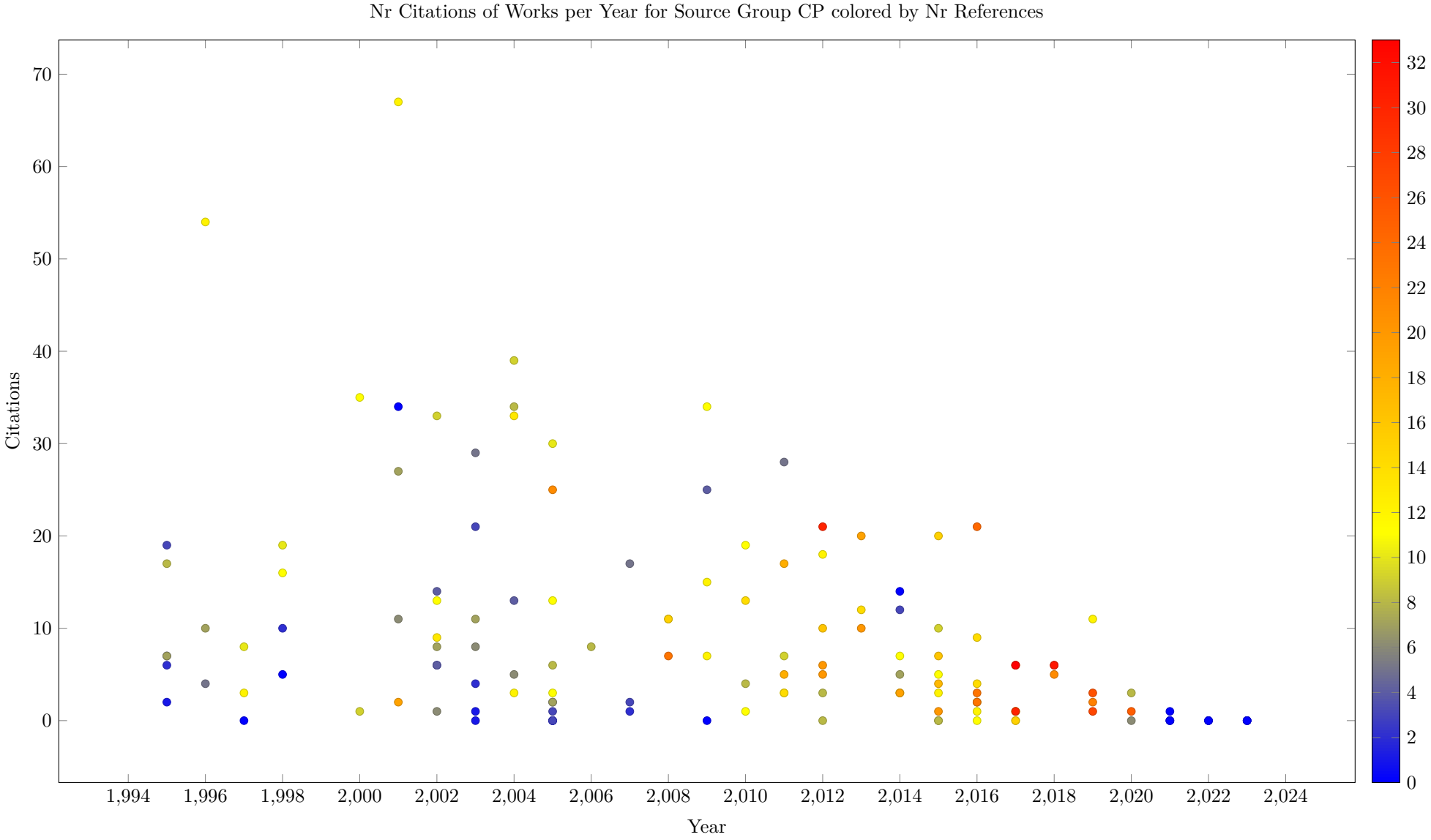

Works by Source Group (Total 1255 Works)
Nr Works
0
50
100
150
200
250
300
350
400
397
142
136
108
68
54
47
46
43
32
31
29
29
23
21
18
17
10
4
OtherJournal
CP
OtherConf
CPAIOR
ORJournal
AAAI
Constraints
Inbook
Background
EJOR
InformsJC
Thesis
IJCAI
ICAPS
AIJournal
ECAI
Preprint
Incoll
Book
Source Group

15.1 Source Group Citations by Year

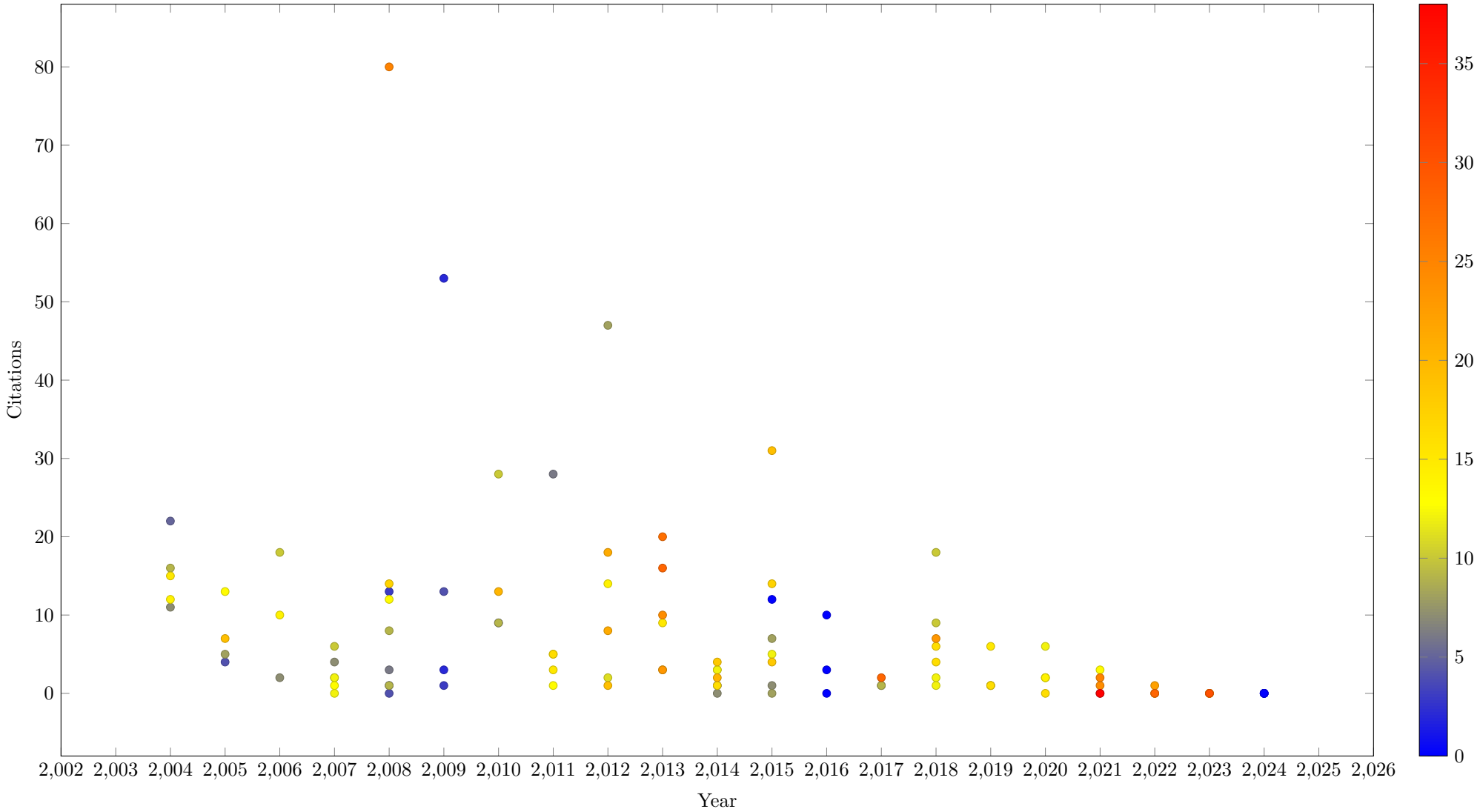
We plot for each source group the number of citations obtained by papers published in a given year. This plot gives both an indication in which period the source group was active, and how significant the works in the source are. It is of course natural that more recent papers have fewer citations than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

Nr Citations of Works per Year for Source Group Background colored by Nr References

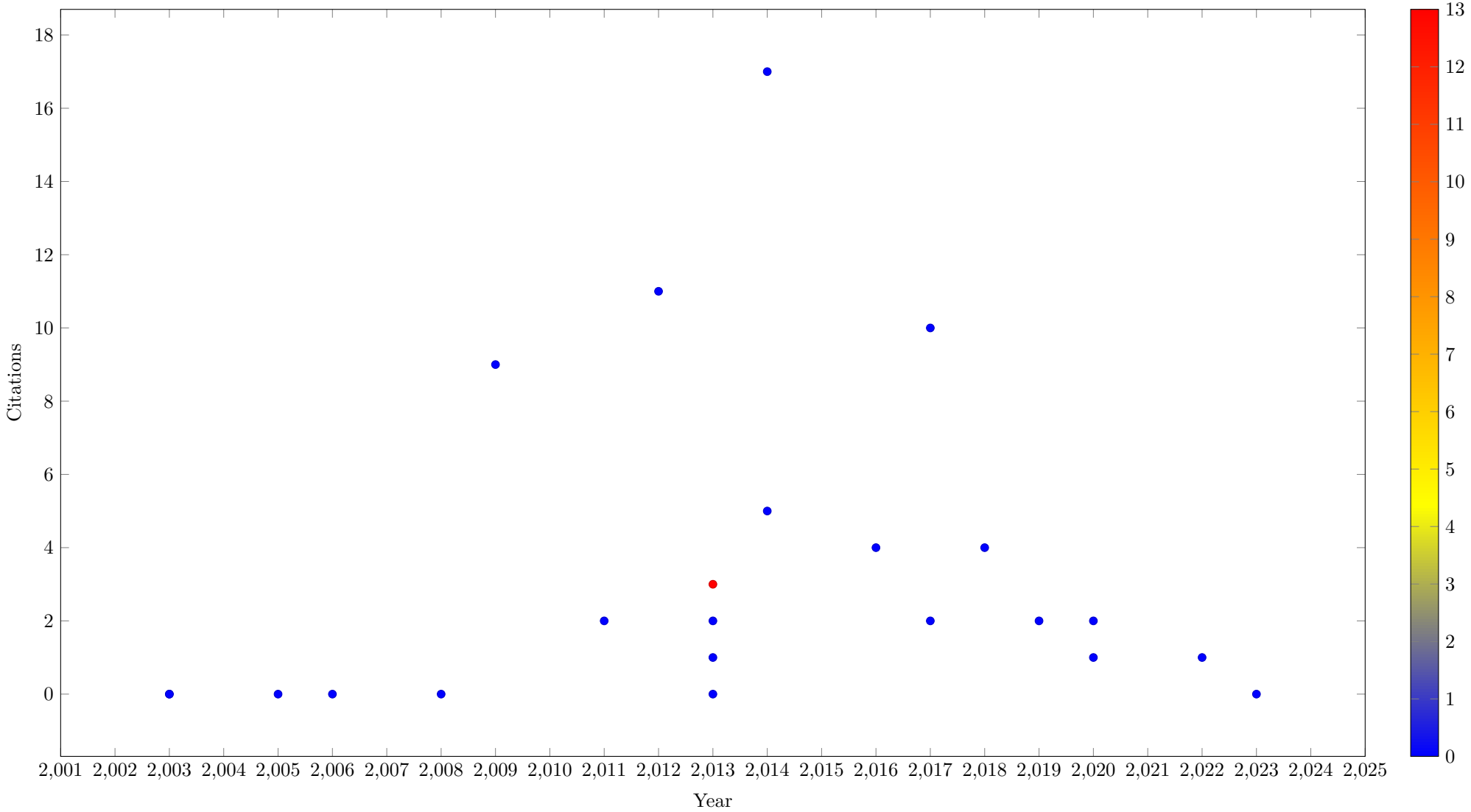


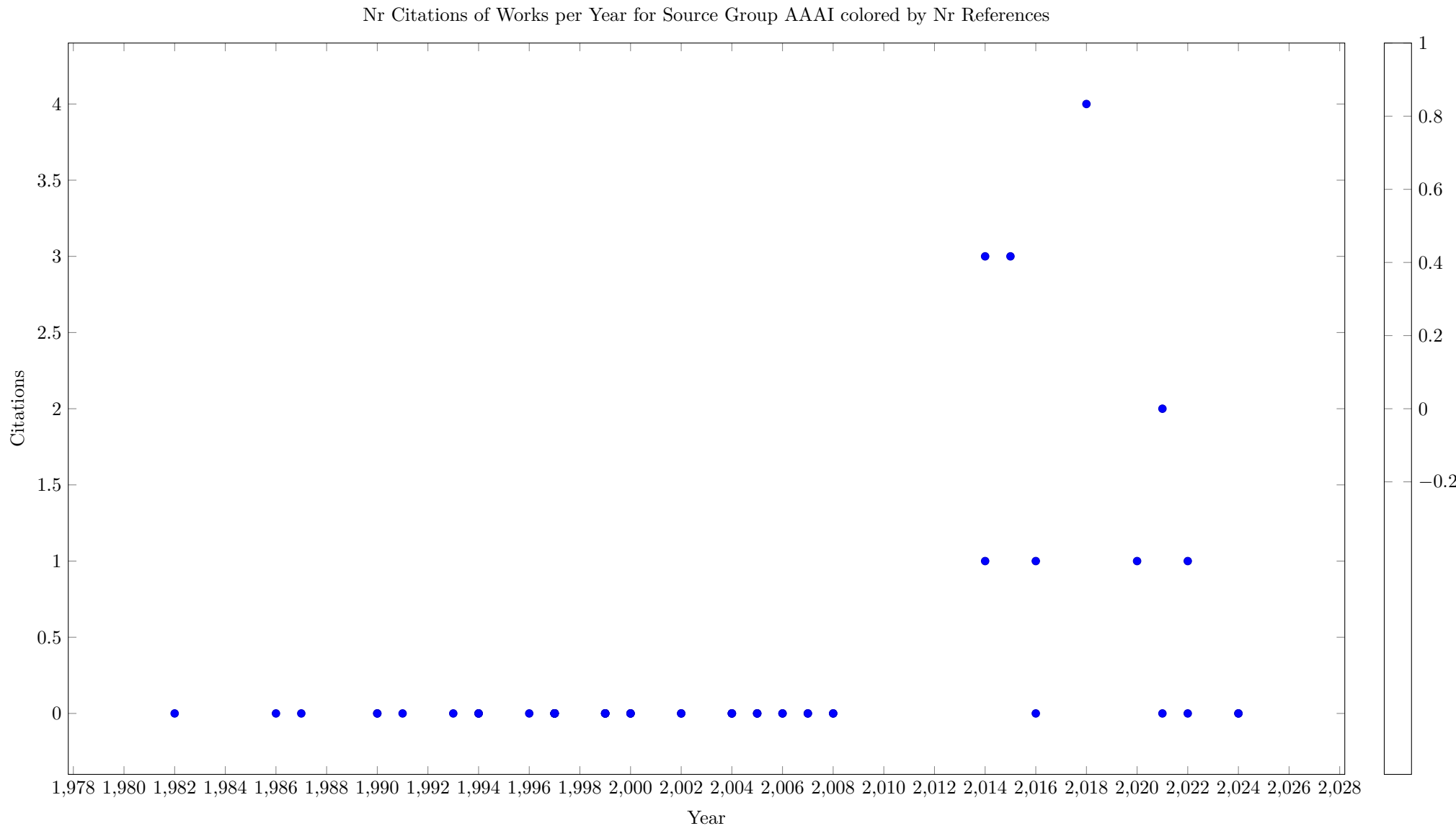

Nr Citations of Works per Year for Source Group CP colored by Nr References
Citations
70
60
50
40
30
20
10
0
1,994
1,996
1,998
2,000
2,002
2,004
2,006
2,008
2,010
2,012
2,014
2,016
2,018
2,020
2,022
2,024
Year
32
30
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0

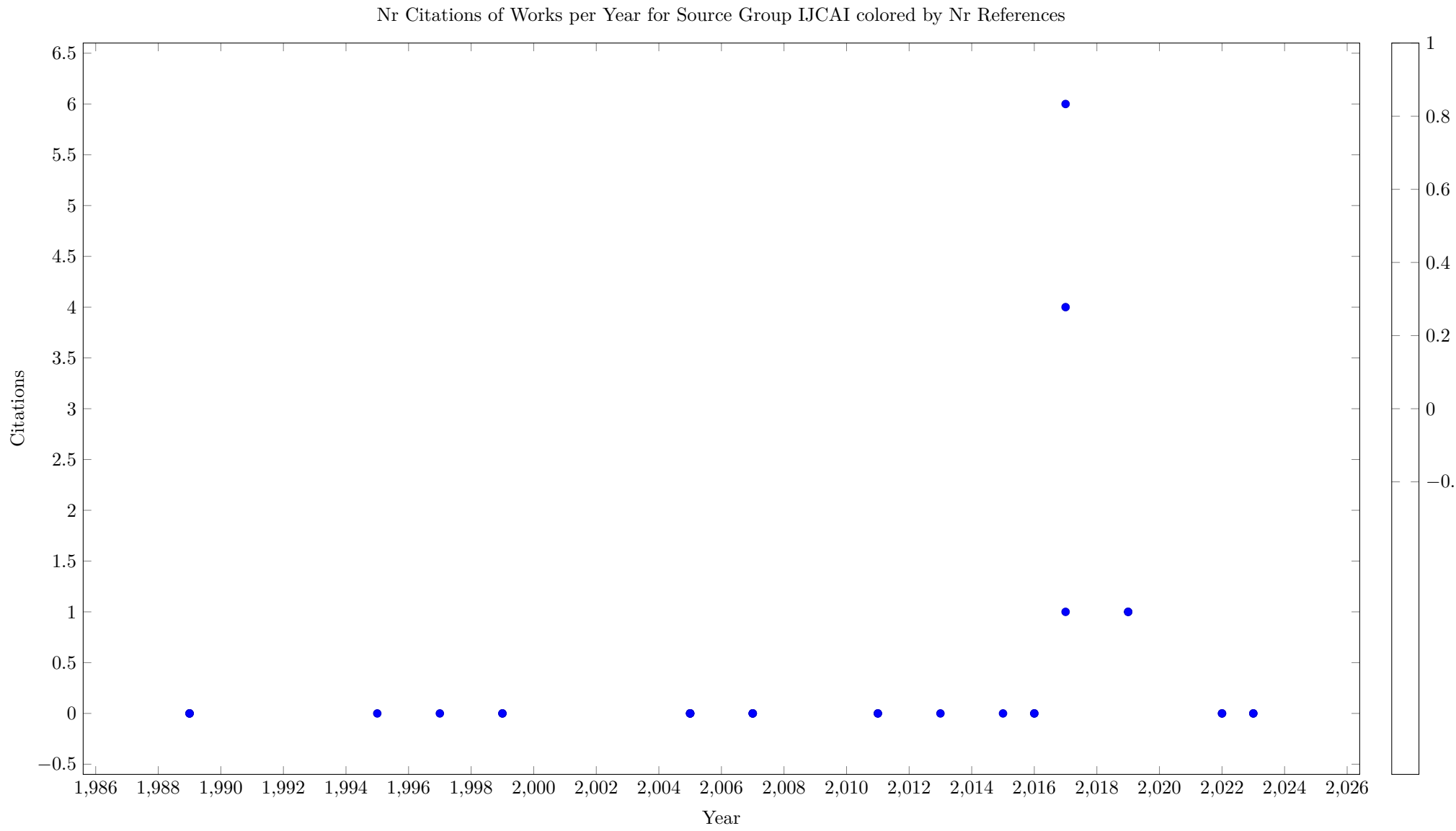
Nr Citations of Works per Year for Source Group CPAIOR colored by Nr References

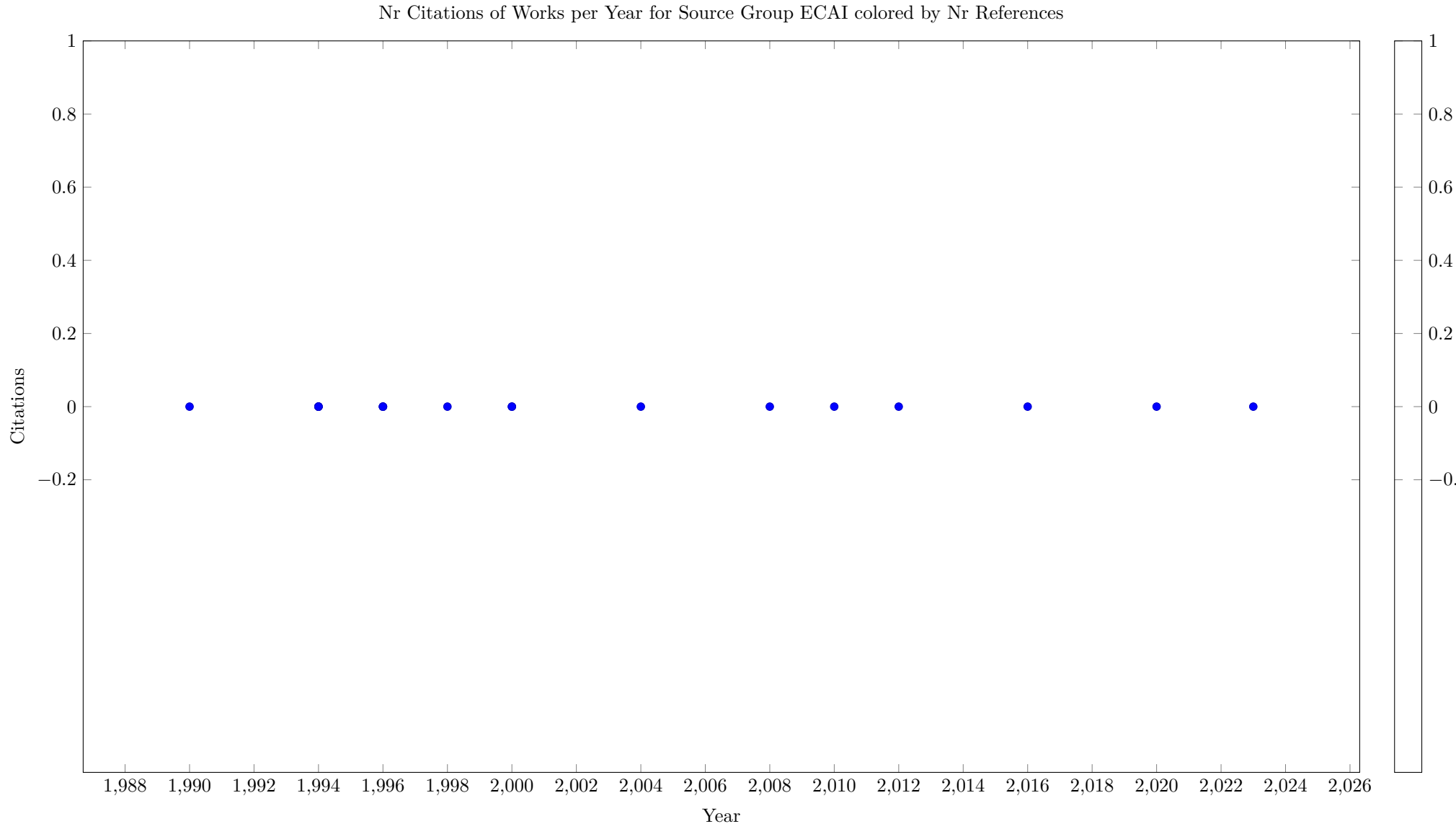


Nr Citations of Works per Year for Source Group ICAPS colored by Nr References




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
3.5
4
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
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
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1,992
1,994
1,996
1,998
2,000
2,002
2,004
2,006
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2,010
2,012
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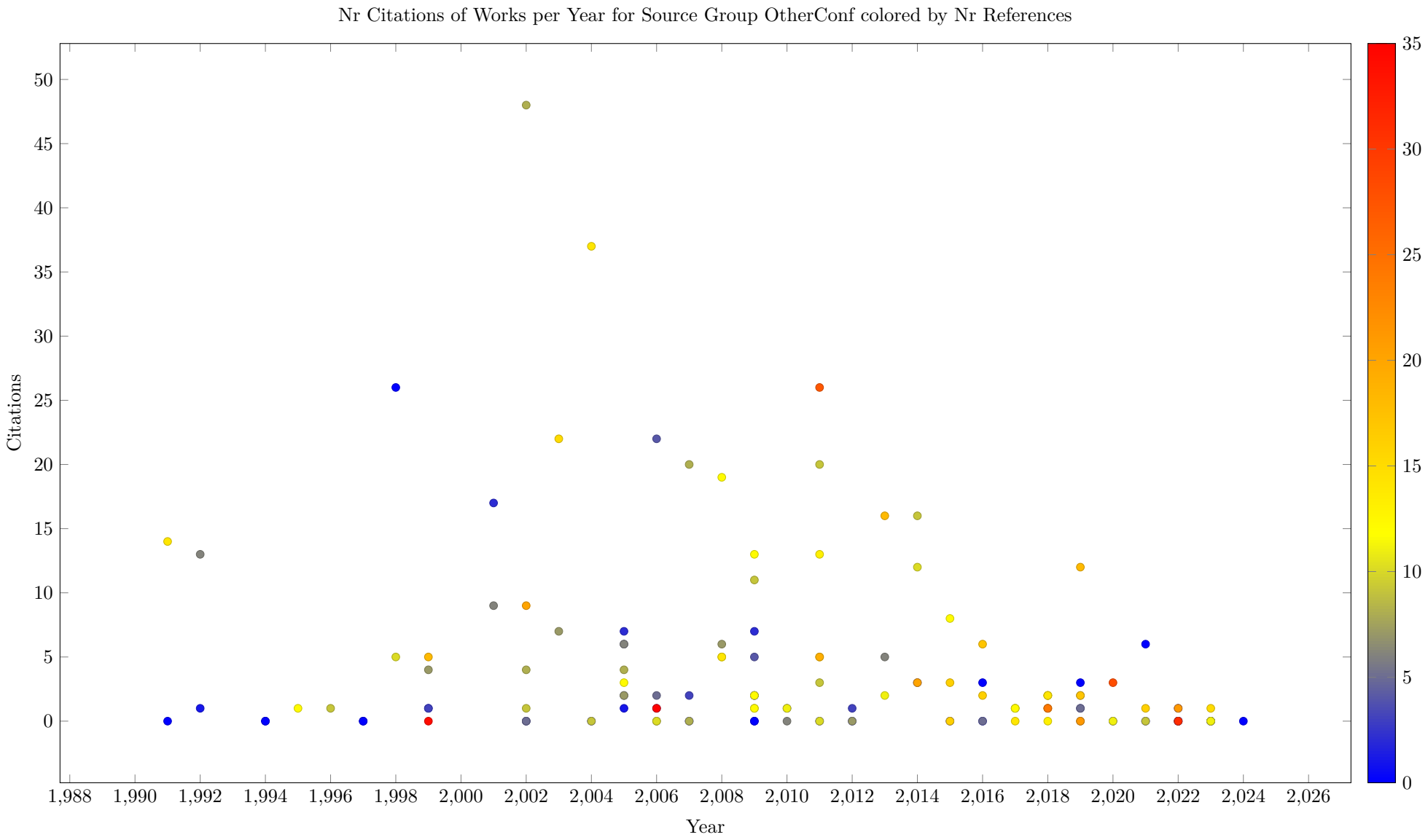
2,016
2,018
2,020
2,022
2,024
2,026
Year


Nr Citations of Works per Year for Source Group OtherConf colored by Nr References
Citations
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35
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45
50
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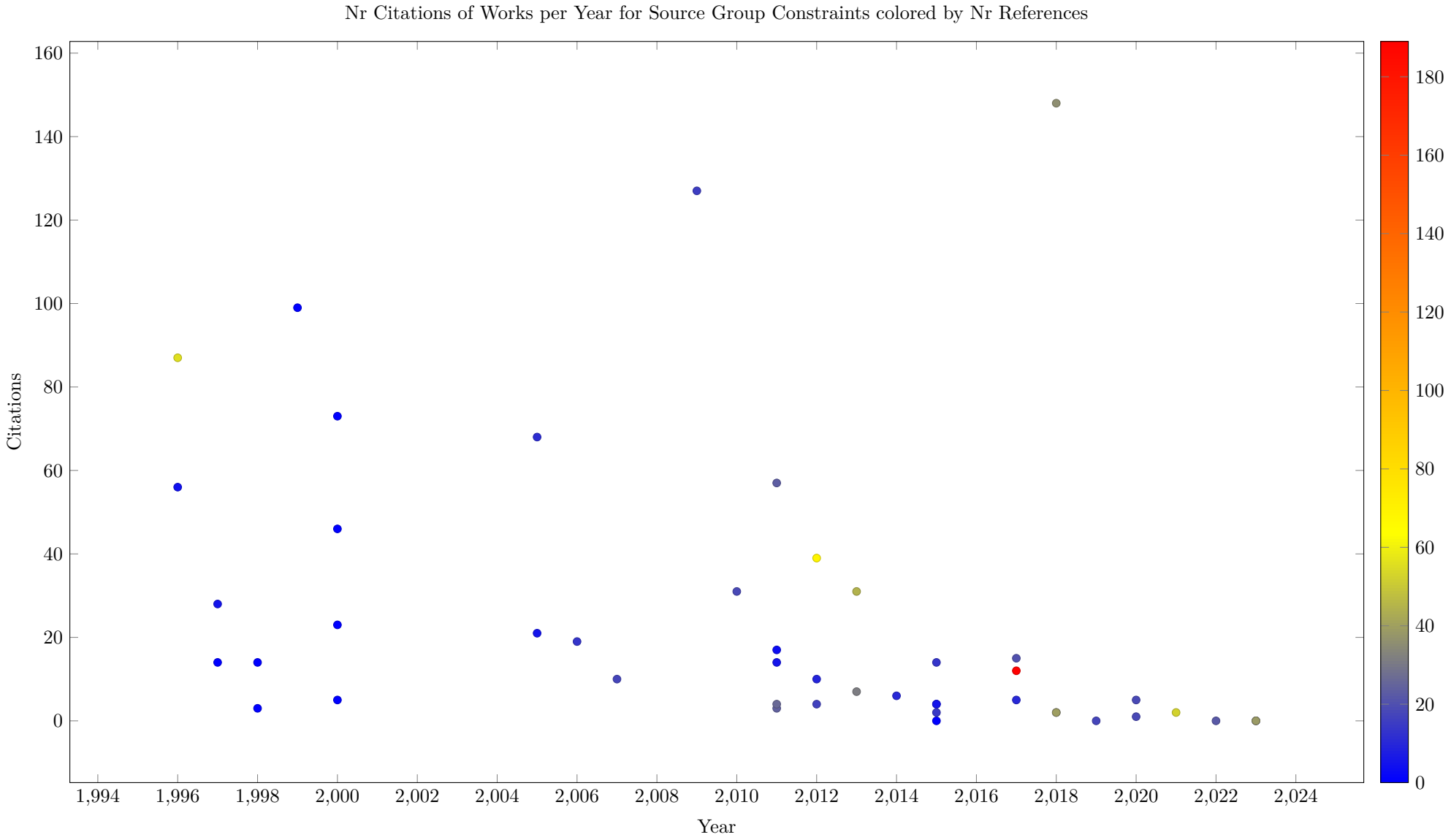
1,998
2,000
2,002
2,004
2,006
2,008
2,010
2,012
2,014
2,016
2,018
2,020
2,022
2,024
2,026


Nr Citations of Works per Year for Source Group Constraints colored by Nr References
Citations
Year
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60
80
100
120
140
160
180
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1,998
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2,018
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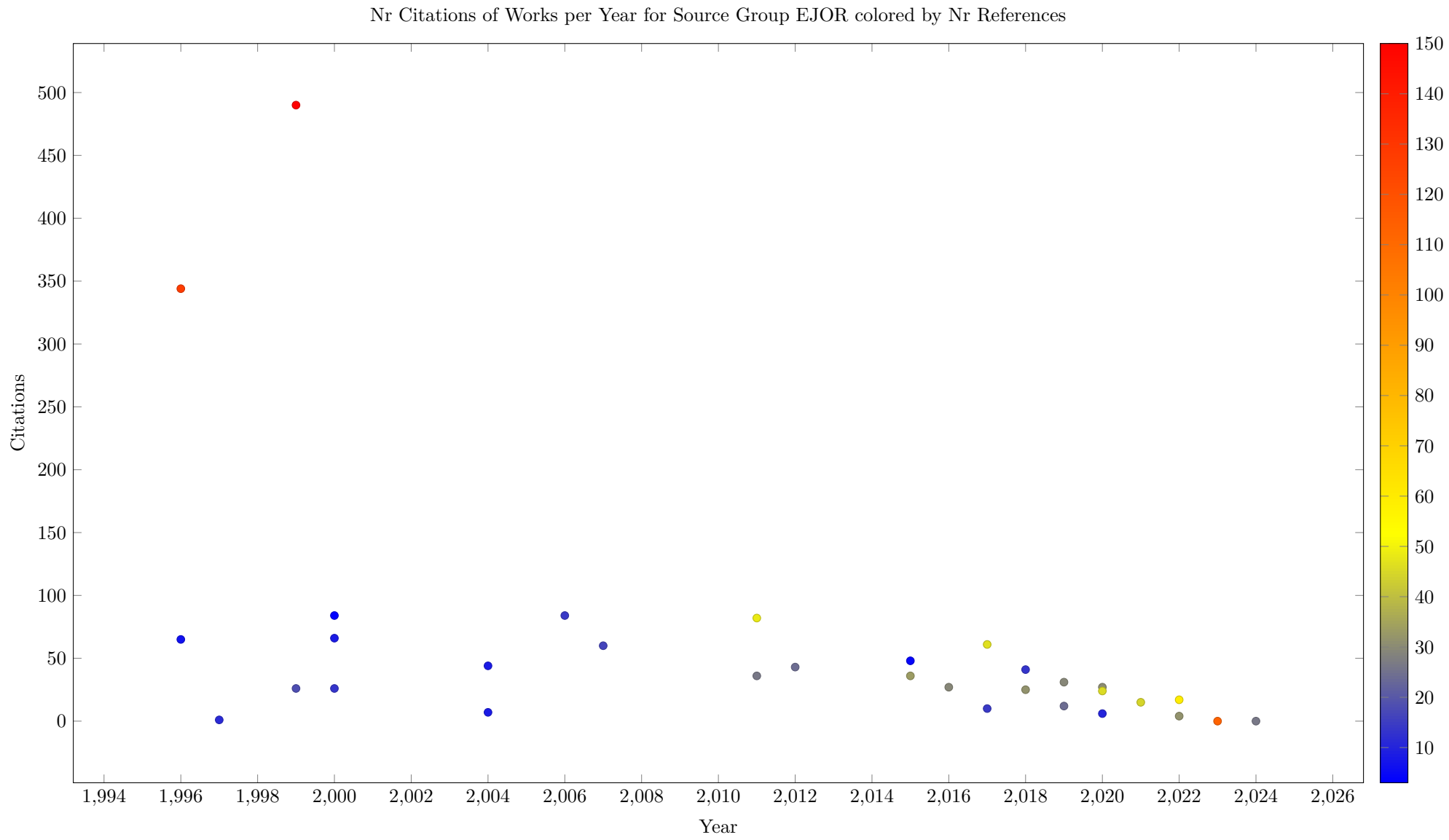
2,022
2,024


Nr Citations of Works per Year for Source Group EJOR colored by Nr References
Citations
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200
250
300
350
400
450
500
Year
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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
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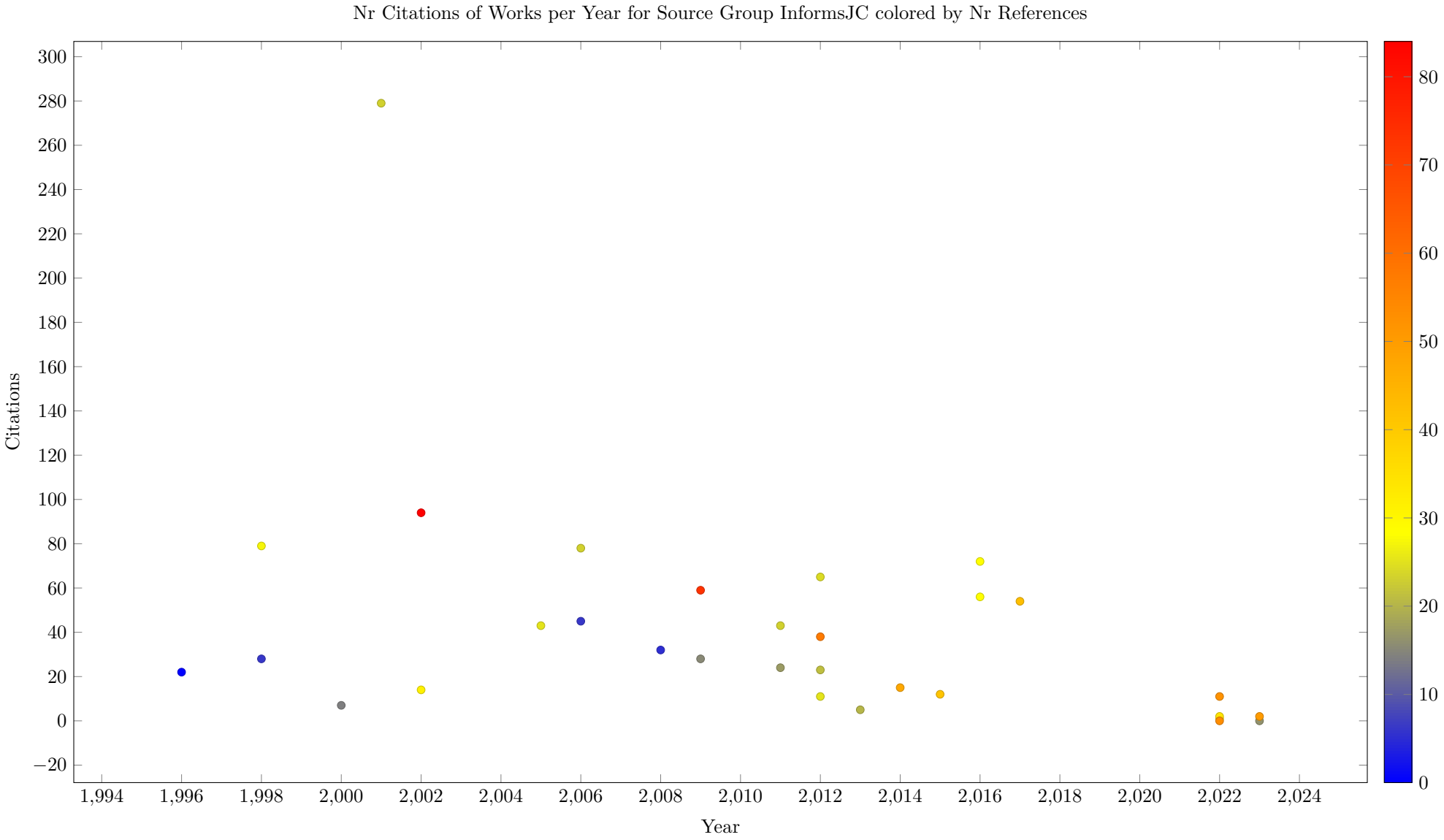
120
130
140
150


Nr Citations of Works per Year for Source Group InformsJC colored by Nr References
Citations
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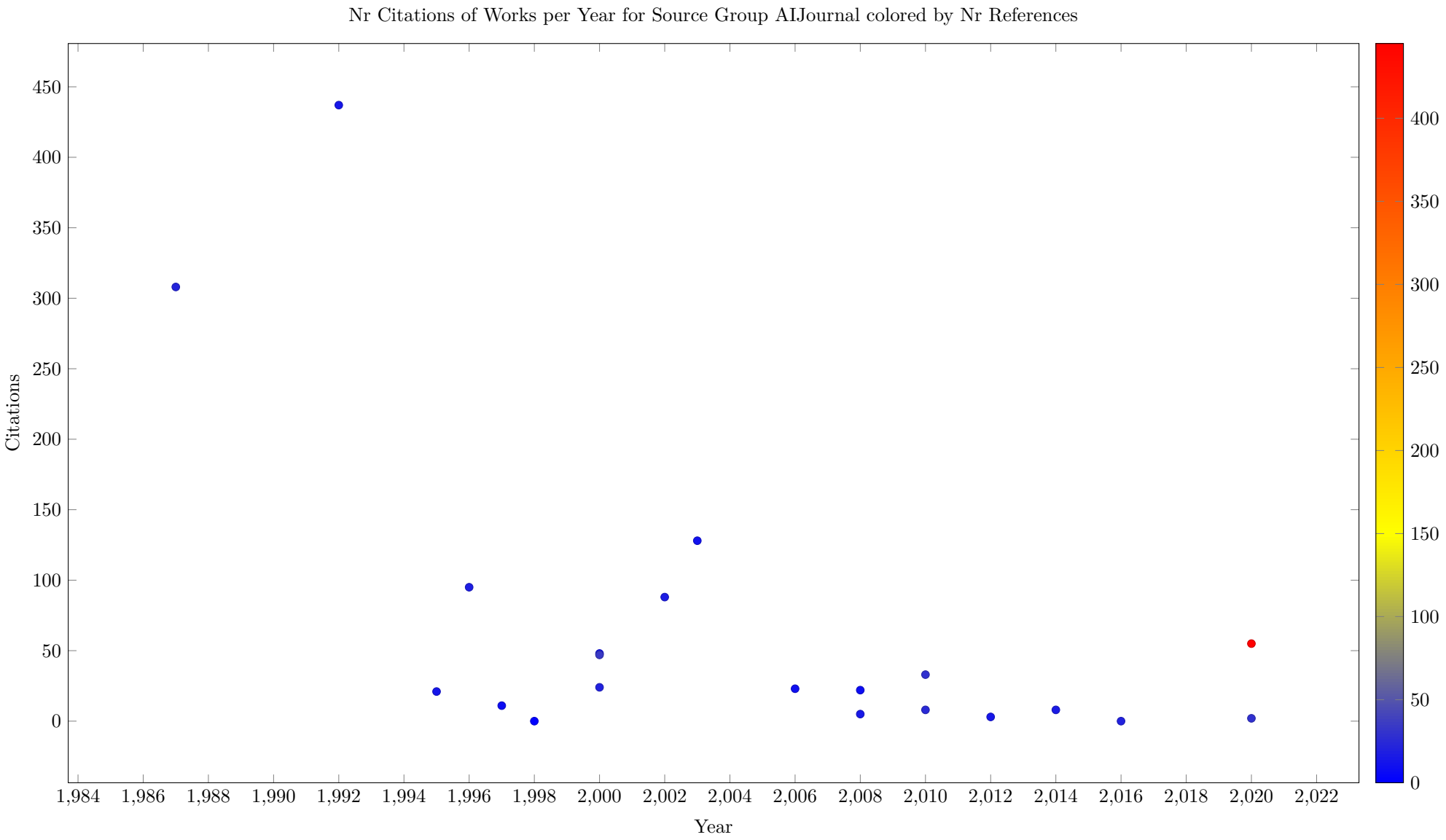
260
240
220
200
180
160
140
120
100
80
60
40
20
0
−20
1,994
1,996
1,998
2,000
2,002
2,004
2,006
2,008
2,010
2,012
2,014
2,016
2,018
2,020
2,022
2,024
Year
80
70
60
50
40
30
20
10
0


Nr Citations of Works per Year for Source Group AIJournal colored by Nr References
Citations
Year
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300
350
400
450
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2,000
2,002
2,004
2,006
2,008
2,010
2,012
2,014
2,016
2,018
2,020
2,022
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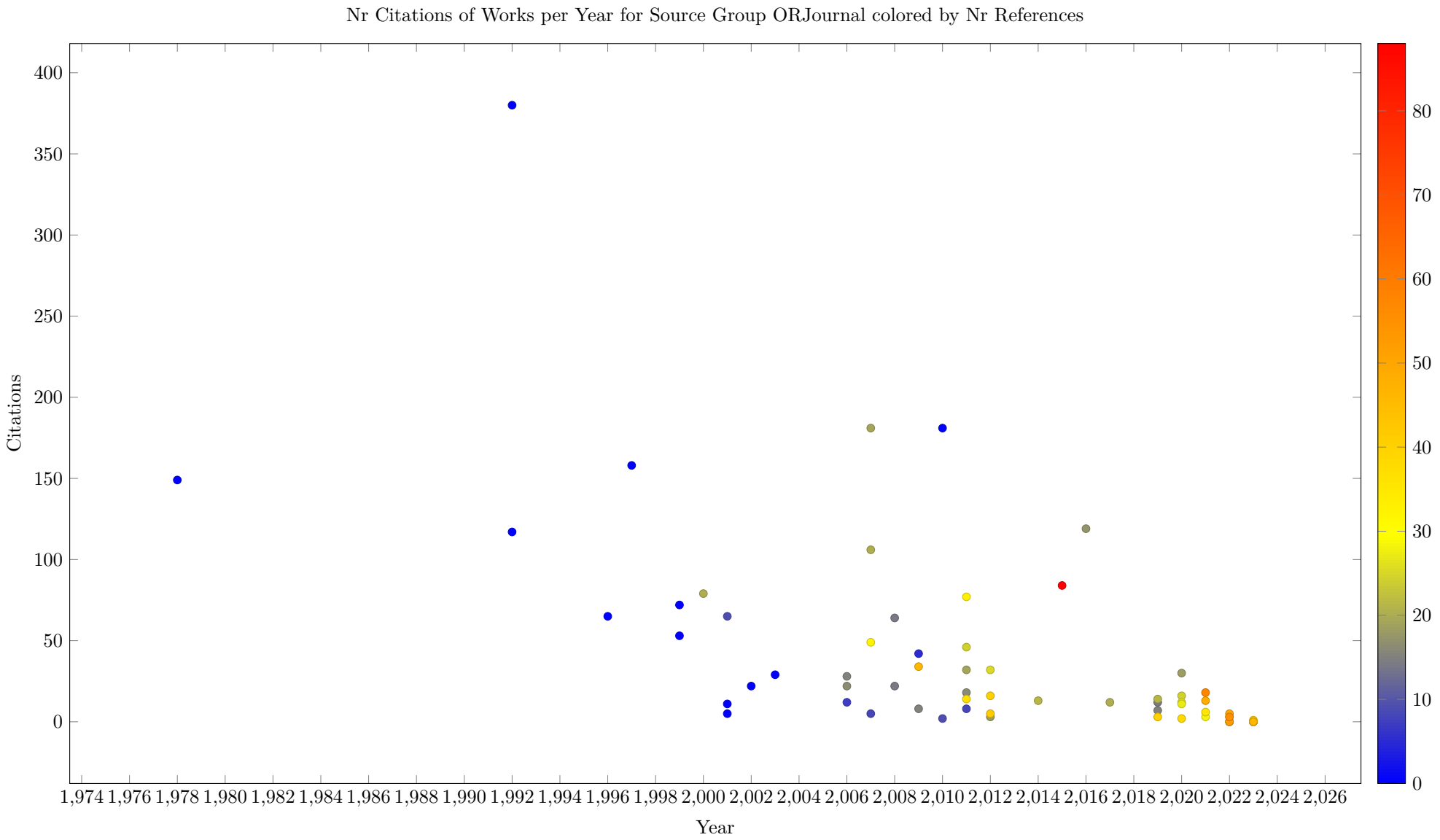
100
150
200
250
300
350
400


Nr Citations of Works per Year for Source Group ORJournal colored by Nr References
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300
350
400
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Year
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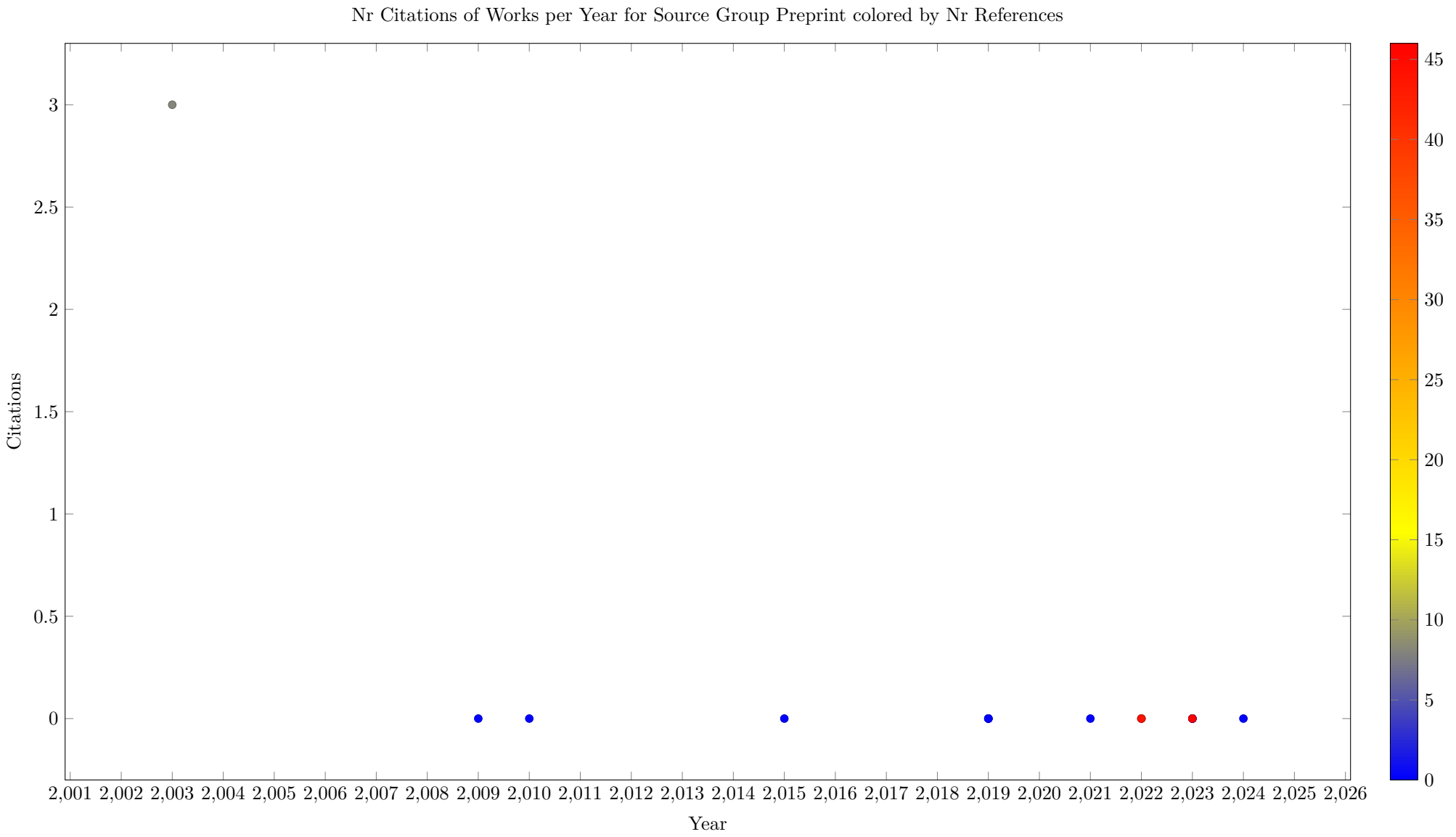
10
20
30
40
50
60
70
80


Nr Citations of Works per Year for Source Group Preprint colored by Nr References
Citations
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1
1.5
2
2.5
3
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 2,026
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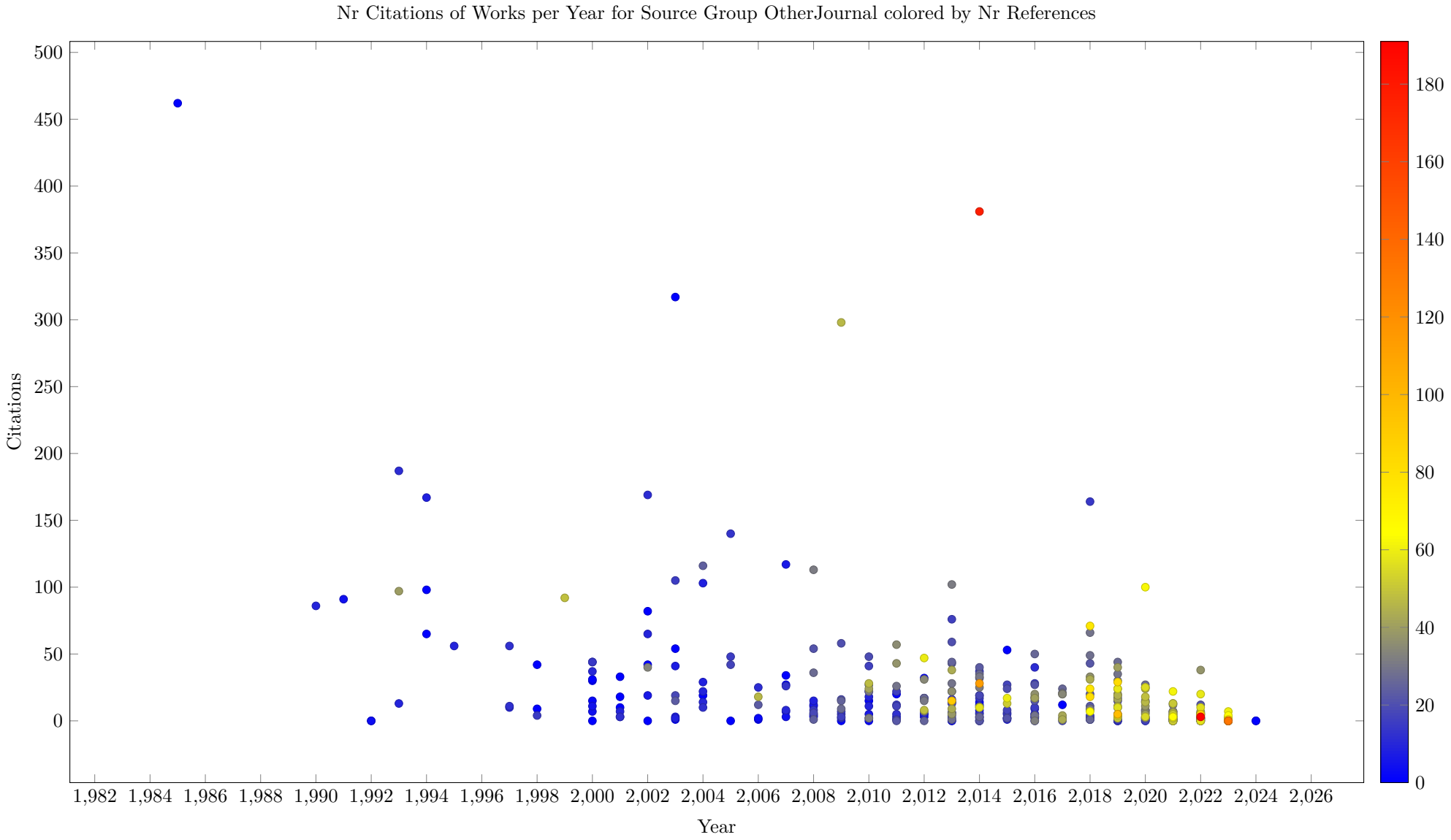
10
15
20
25
30
35
40
45


Nr Citations of Works per Year for Source Group OtherJournal colored by Nr References
Citations
500
450
400
350
300
250
200
150
100
50
0
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
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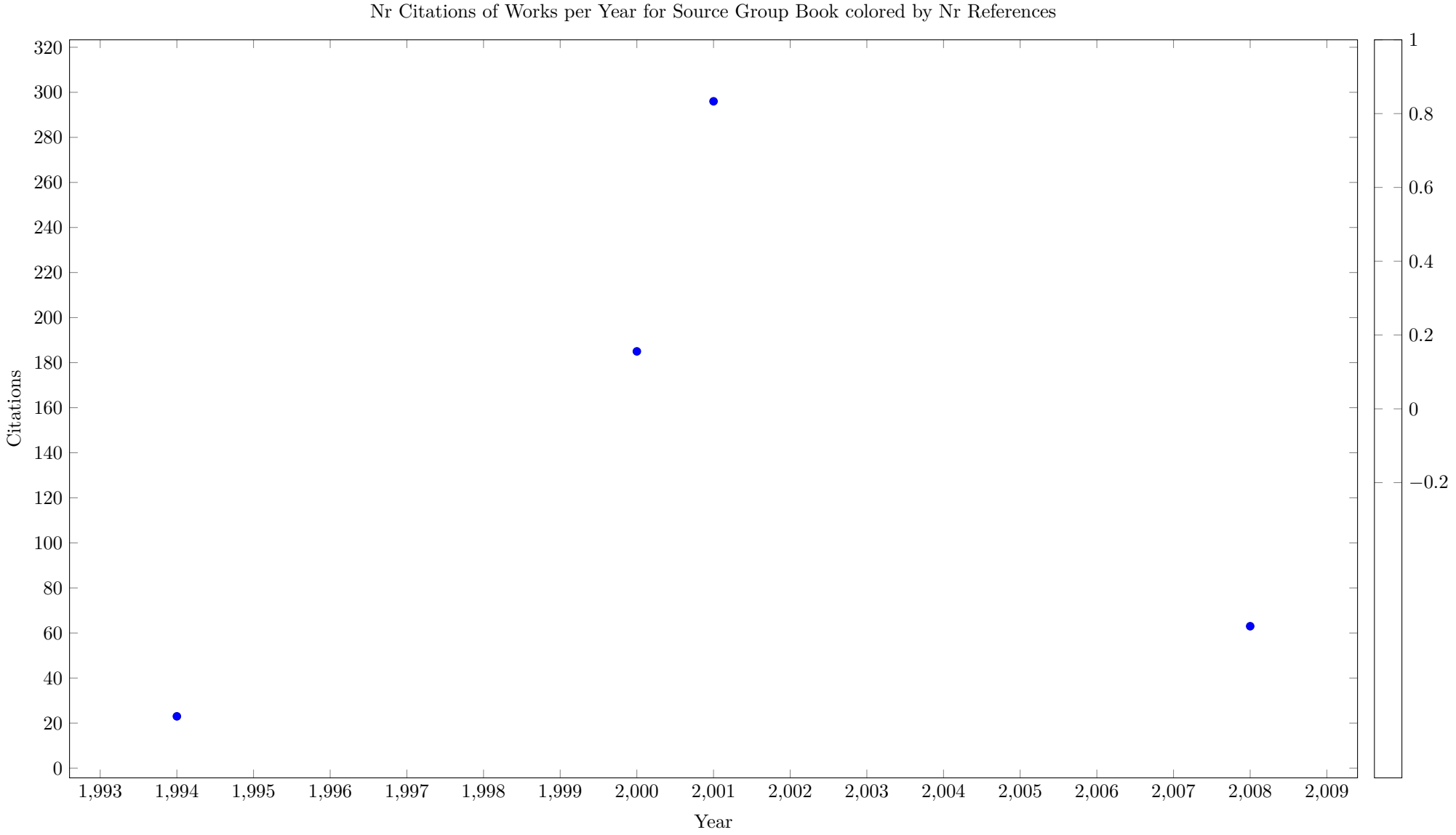
160
140
120
100
80
60
40
20
0


Nr Citations of Works per Year for Source Group Book colored by Nr References
Citations
0
20
40
60
80
100
120
140
160
180
200
220
240
260
280
300
320
Year
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
1
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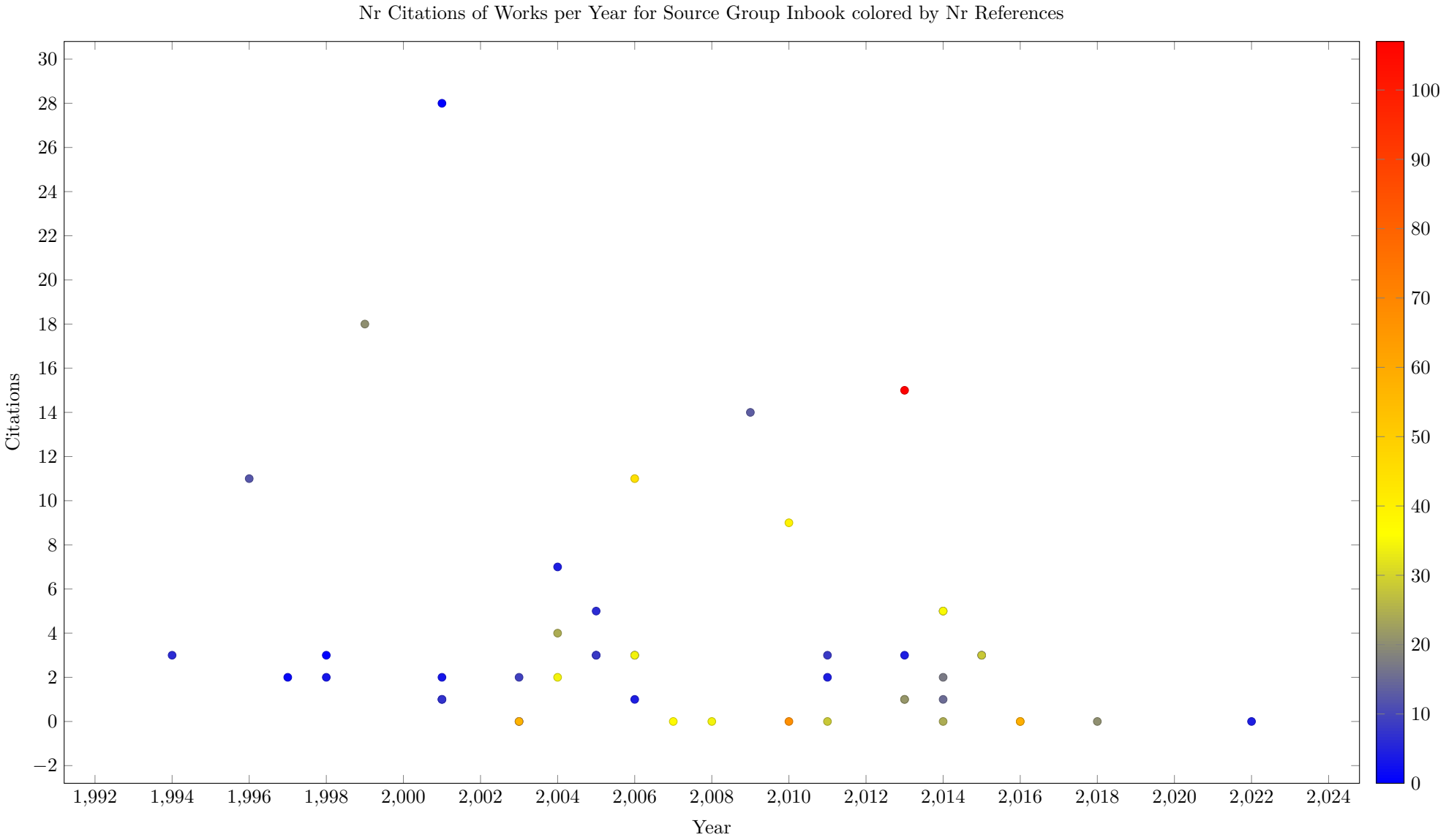
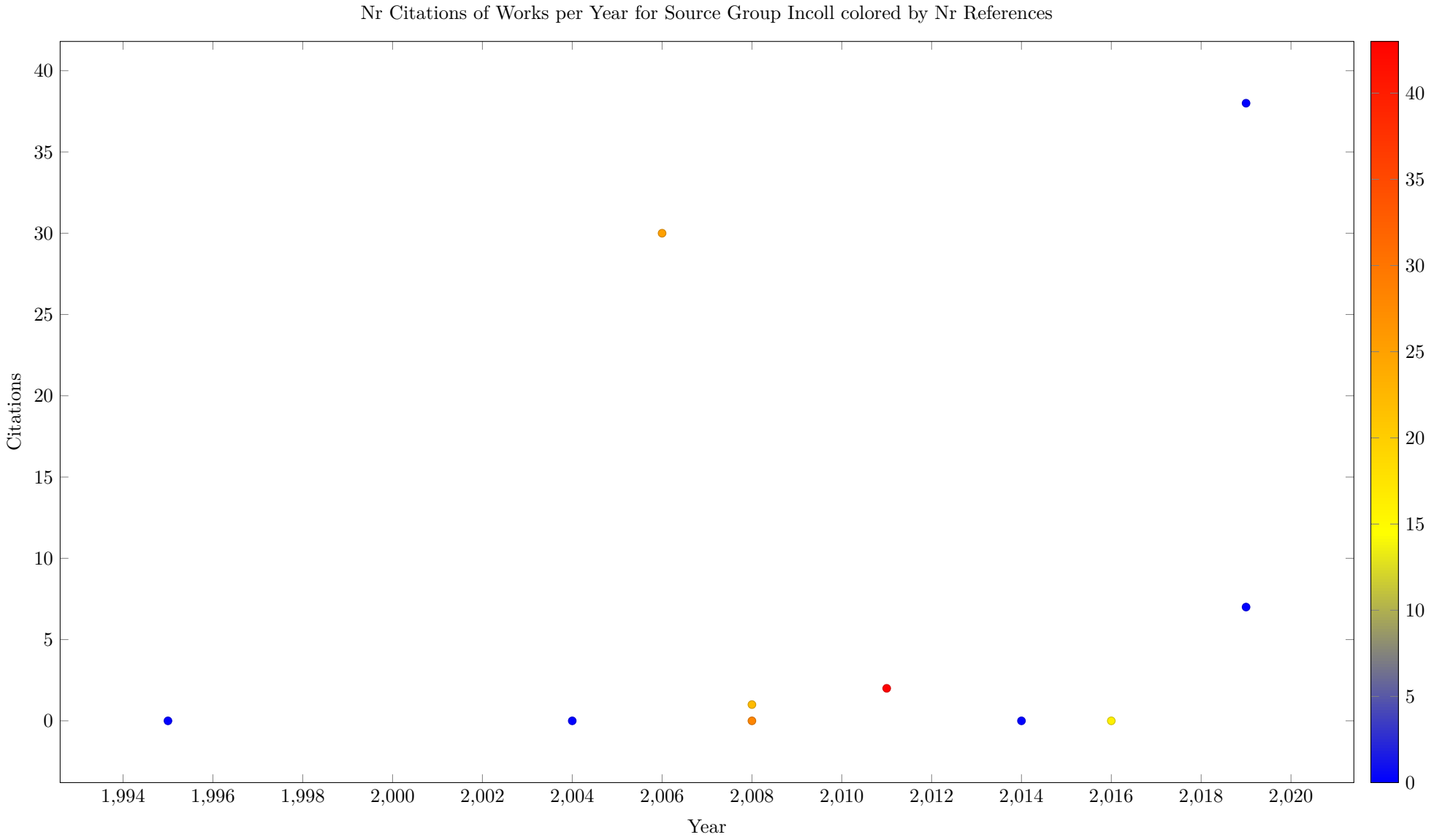
0.6
0.4
0.2
0
−0.2


Nr Citations of Works per Year for Source Group Inbook colored by Nr References
Citations
Year
30
28
26
24
22
20
18
16
14
12
10
8
6
4
2
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
2,024
100
90
80
70
60
50
40
30
20
10
0


Nr Citations of Works per Year for Source Group Incoll colored by Nr References
Citations
Year
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5
10
15
20
25
30
35
40
1,994
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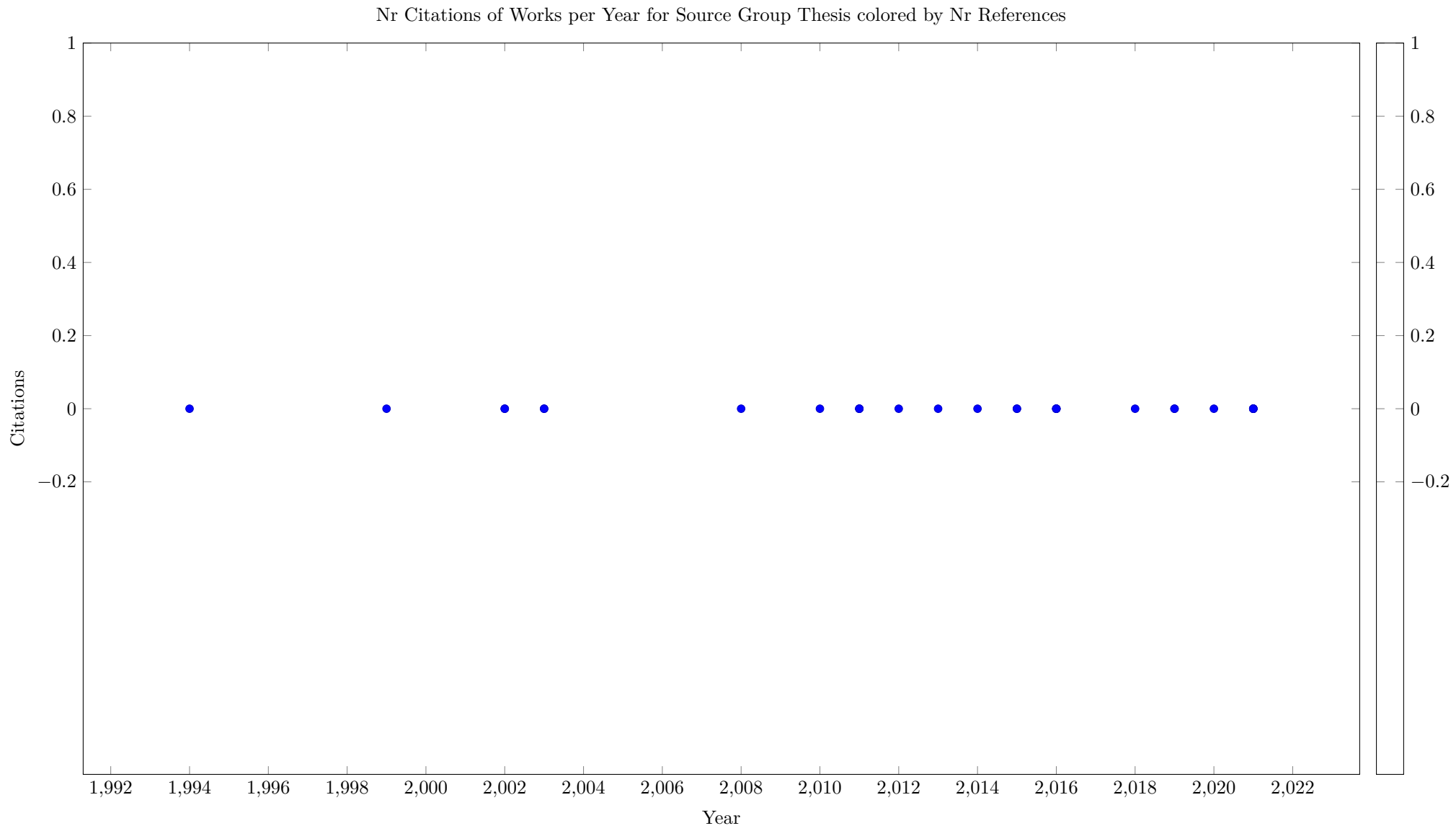
2,010
2,012
2,014
2,016
2,018
2,020


Nr Citations of Works per Year for Source Group Thesis colored by Nr References
Citations
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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	Preprint	OtherJournal	Book	Inbook	Incoll
Background	68	16	3				1	12	8	21	2	25		31	6	4	
CP	131	129	71	2	1	1	13	42	6	28	18	20		83	27	5	4
CPAIOR	98	112	71	4	2	1	17	48	15	26	7	29	1	79	28	6	2
ICAPS	4	3															
OtherConf	56	42	23				13	22	12	16	14	19		75	10	6	1
Constraints	63	59	43	2			9	24	5	15	8	16		63	18	3	1
EJOR	62	3	1					10	21	19	6	18		44		3	1
InformsJC	70	22	12					19	20	28	4	20		43	16	2	1
AIJournal	33	10	4	1			8	5	9	5	16	4		42		2	
ORJournal	101	41	18				1	32	25	34	13	30		93	8	4	1
Preprint	6							3	11	5		4		8	2		
OtherJournal	315	84	56	6			27	111	100	98	60	133		573	40	12	6
Inbook	99	20	15				3	15	11	24	9	29		55	12	8	
Incoll	13	2					2	3	5	1	5	6		6	2	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.

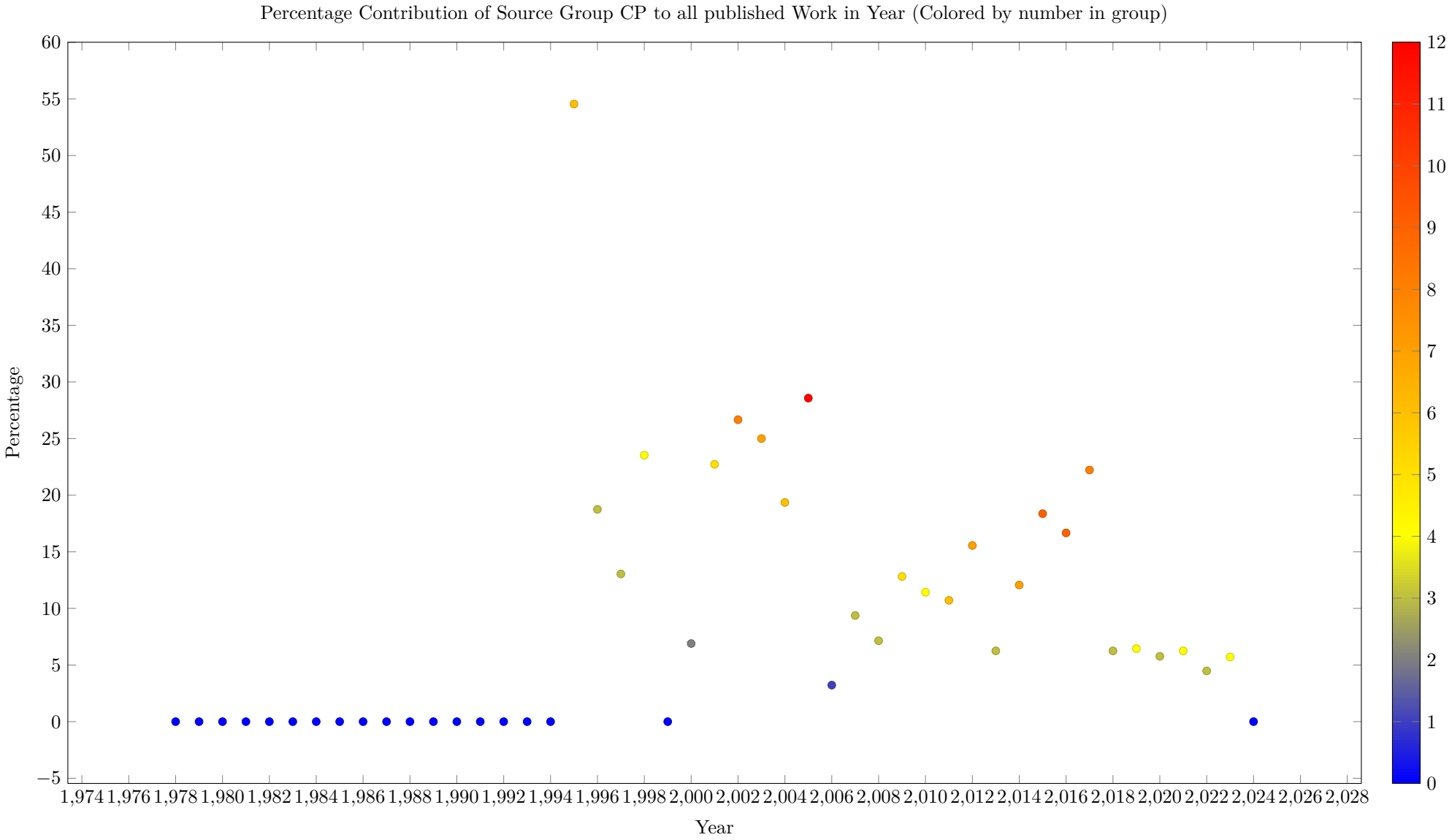
Note that the numbers are derived from the flows contained in the survey, which are based on the OpenCitation reference links. If such links are missing, or we are missing works in some group, then the results will be affected.

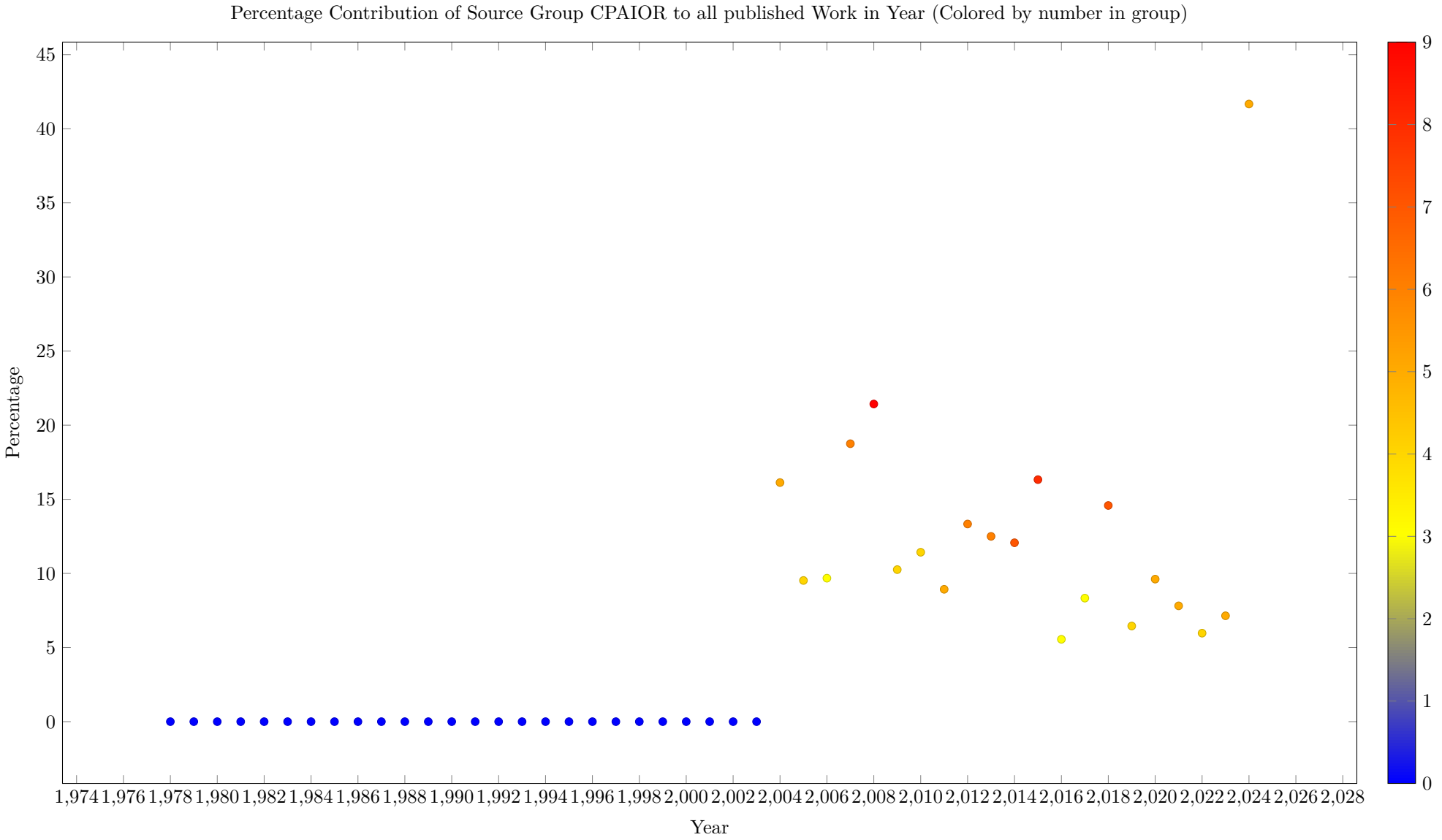
Table 15: Reference Flows Normalized

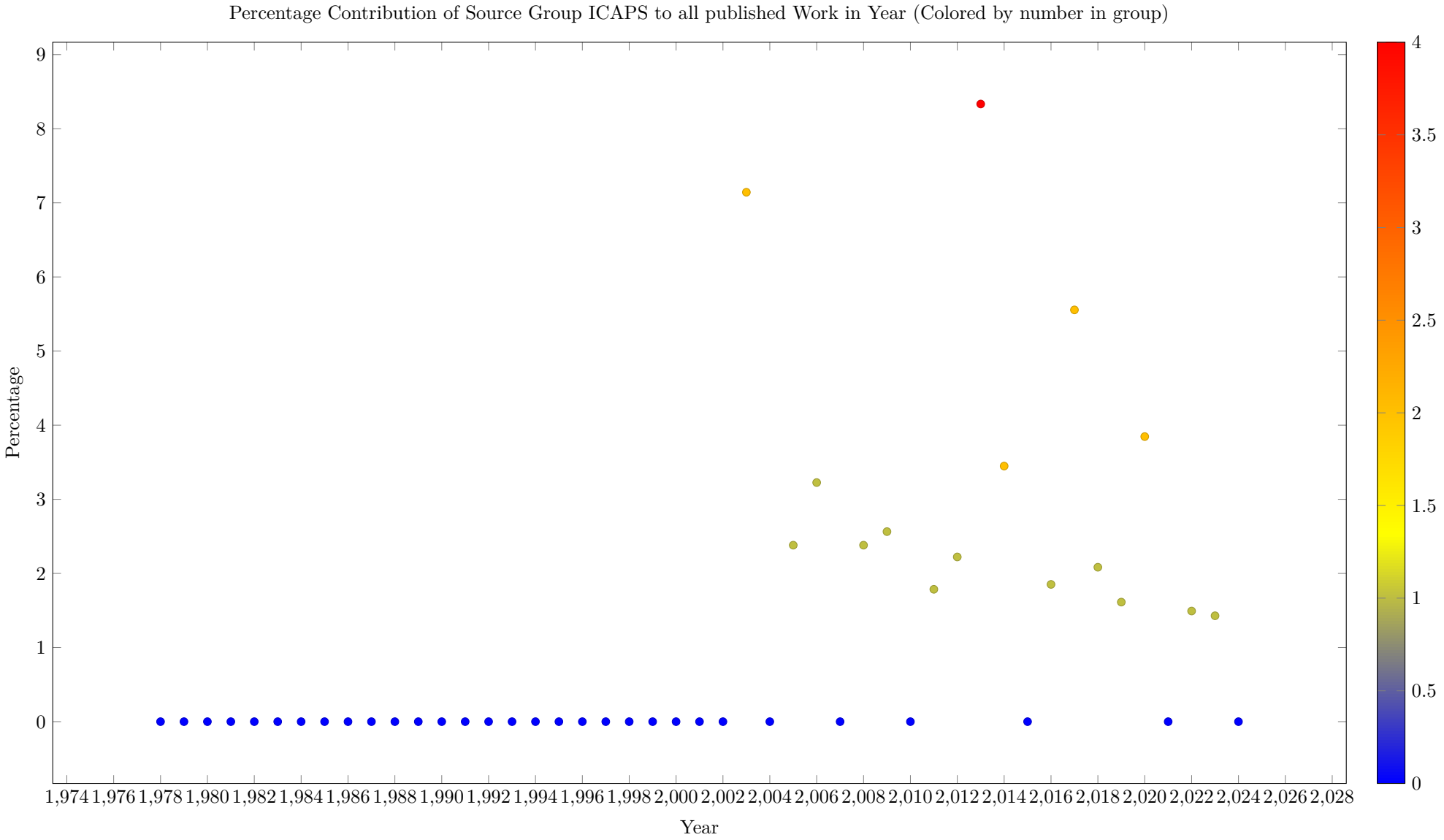
	Background	CP	CPAIOR	ICAPS	AAAI	IJCAI	OtherConf	Constraints	EJOR	InformsJC	AIJournal	ORJournal	Preprint	OtherJournal	Book	Inbook	Incoll
Background	3.68	0.26	0.06				0.02	0.59	0.58	1.58	0.22	0.85		0.18	3.49	0.20	
CP	2.15	0.64	0.46	0.06	0.01	0.02	0.07	0.63	0.13	0.64	0.60	0.21		0.15	4.75	0.08	0.28
CPAIOR	2.11	0.73	0.61	0.16	0.03	0.03	0.12	0.95	0.43	0.78	0.31	0.39	0.05	0.18	6.48	0.12	0.19
ICAPS	0.40	0.09															
OtherConf	0.96	0.22	0.16				0.07	0.34	0.28	0.38	0.49	0.21		0.14	1.84	0.10	0.07
Constraints	3.12	0.88	0.85	0.19			0.14	1.09	0.33	1.03	0.81	0.50		0.34	9.57	0.14	0.21
EJOR	4.51	0.07	0.03					0.66	2.05	1.92	0.89	0.83		0.35		0.20	0.31
InformsJC	5.25	0.50	0.36					1.30	2.02	2.91	0.61	0.95		0.35	12.90	0.14	0.32
AIJournal	3.65	0.34	0.18	0.21			0.28	0.51	1.34	0.77	3.63	0.28		0.50		0.21	
ORJournal	3.45	0.42	0.25				0.01	1.00	1.15	1.61	0.91	0.65		0.34	2.94	0.13	0.15
Preprint	0.82							0.38	2.02	0.95		0.35		0.12	2.94		
OtherJournal	1.85	0.15	0.13	0.07			0.05	0.59	0.79	0.80	0.72	0.49		0.36	2.52	0.07	0.15
Inbook	5.01	0.31	0.30				0.05	0.69	0.75	1.68	0.93	0.93		0.30	6.52	0.38	
Incoll	3.02	0.14					0.15	0.64	1.56	0.32	2.38	0.88		0.15	5.00	0.22	

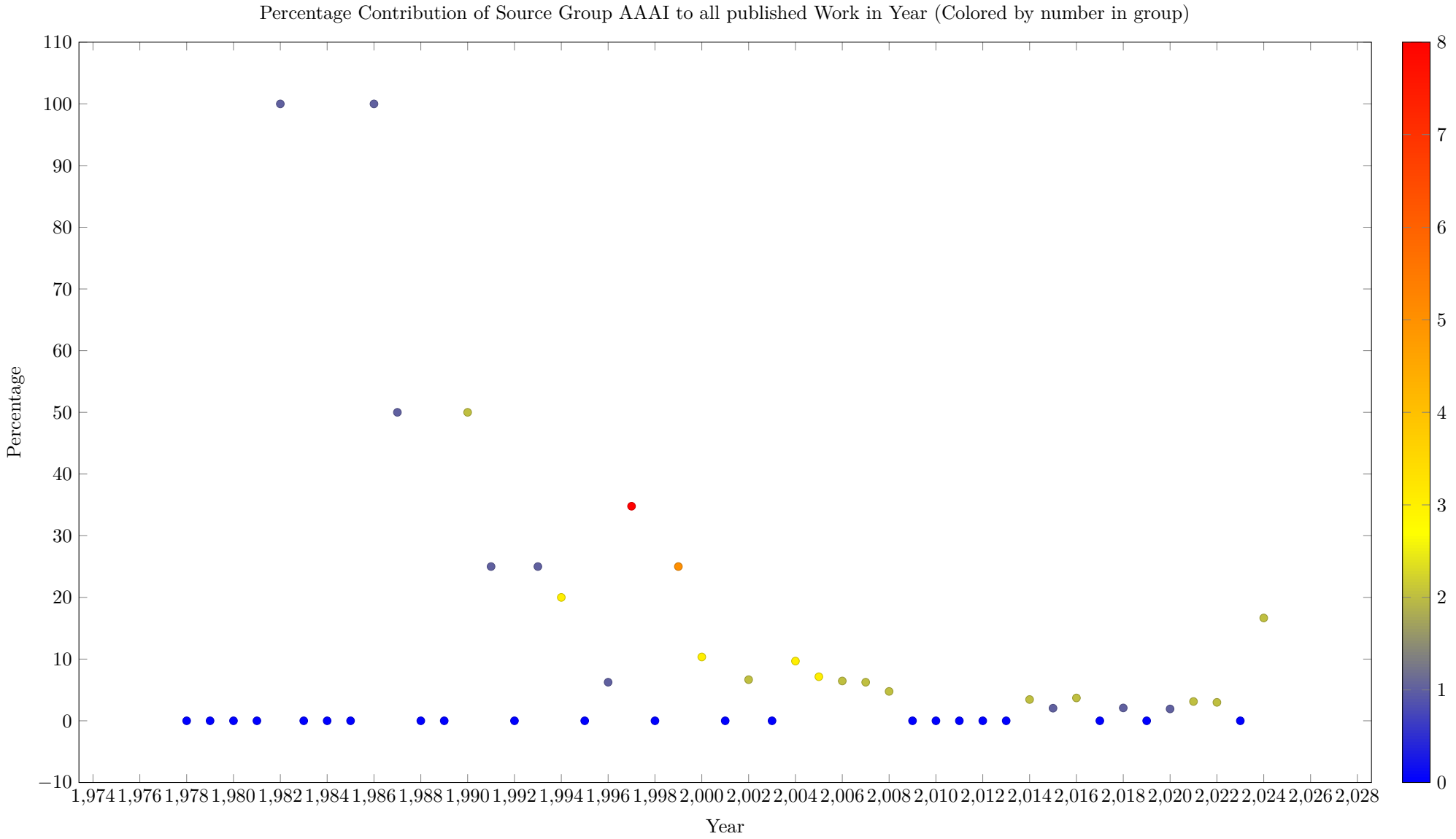
16 Contribution of Source Group to Total Works per Year

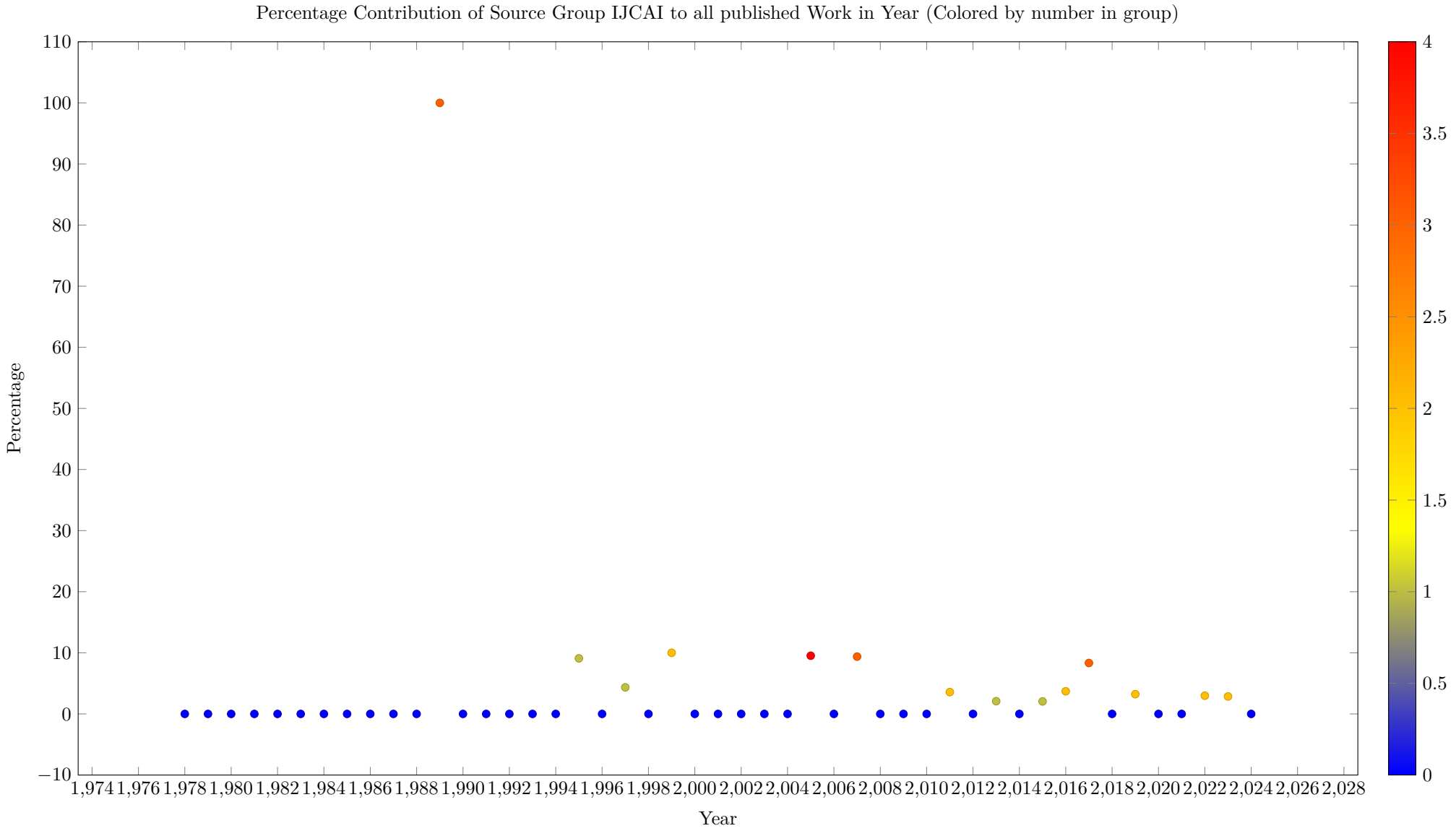
The following plots show the percentage of works published in a year belonging to a specific source group. This plot helps to understand how important that group is to the field over time


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
0
5
10
15
20
25
30
35
40
45
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 1 2 3 4 5 6 7 8 9


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
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
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
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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
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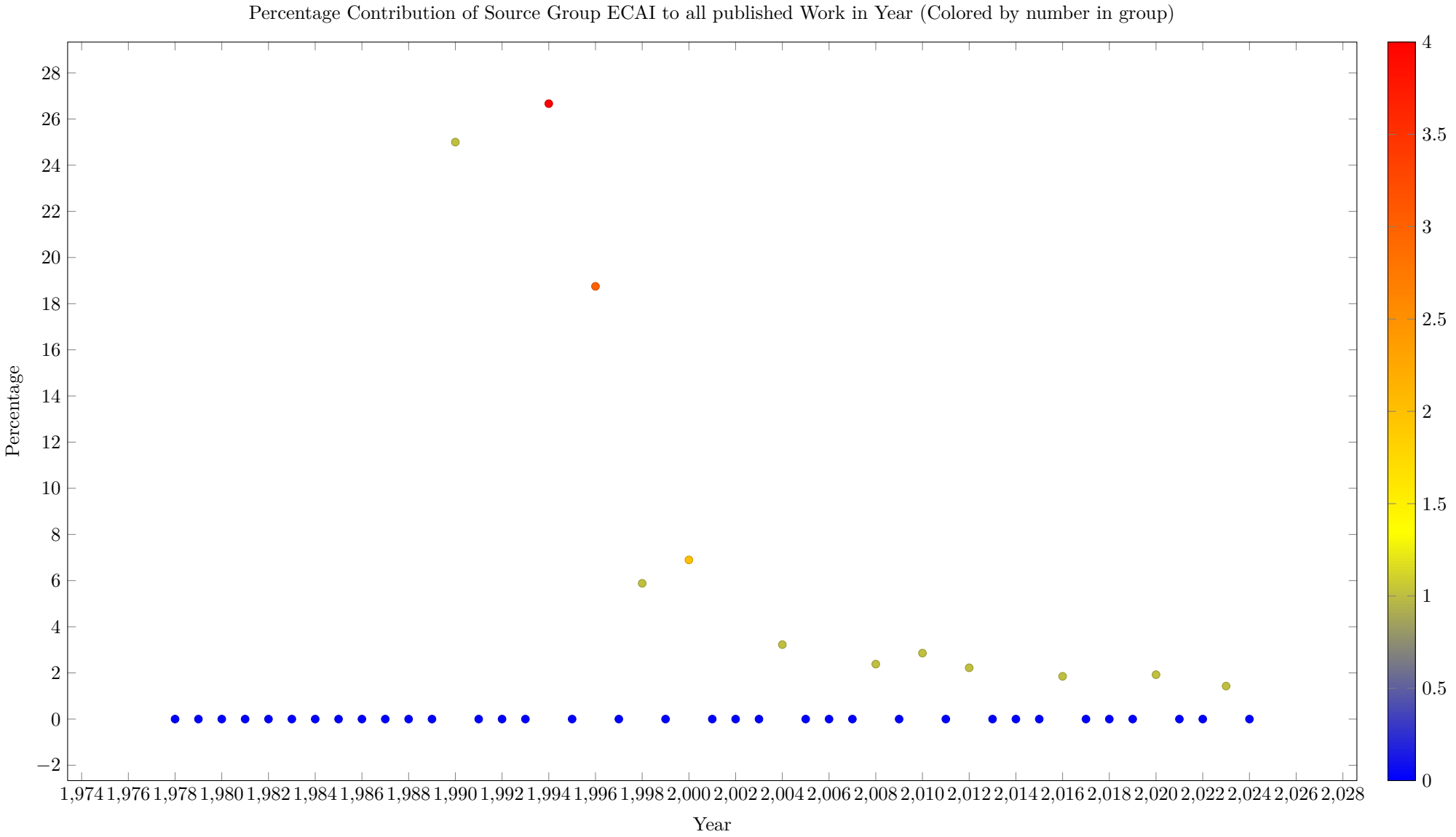
3
2.5
2
1.5
1
0.5
0


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
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3.5
3
2.5
2
1.5
1
0.5
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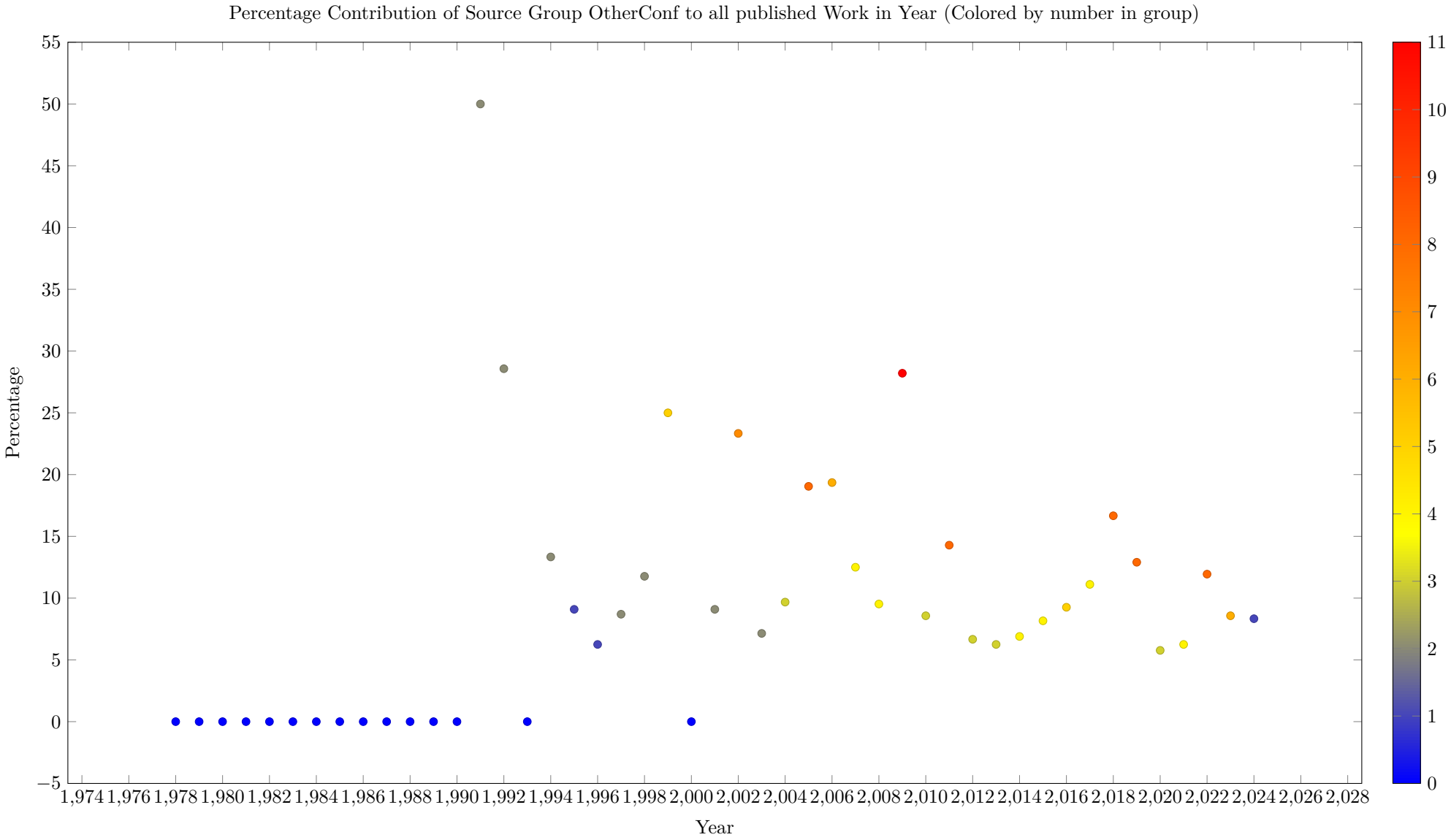
Percentage Contribution of Source Group OtherConf to all published Work in Year (Colored by number in group)
Percentage
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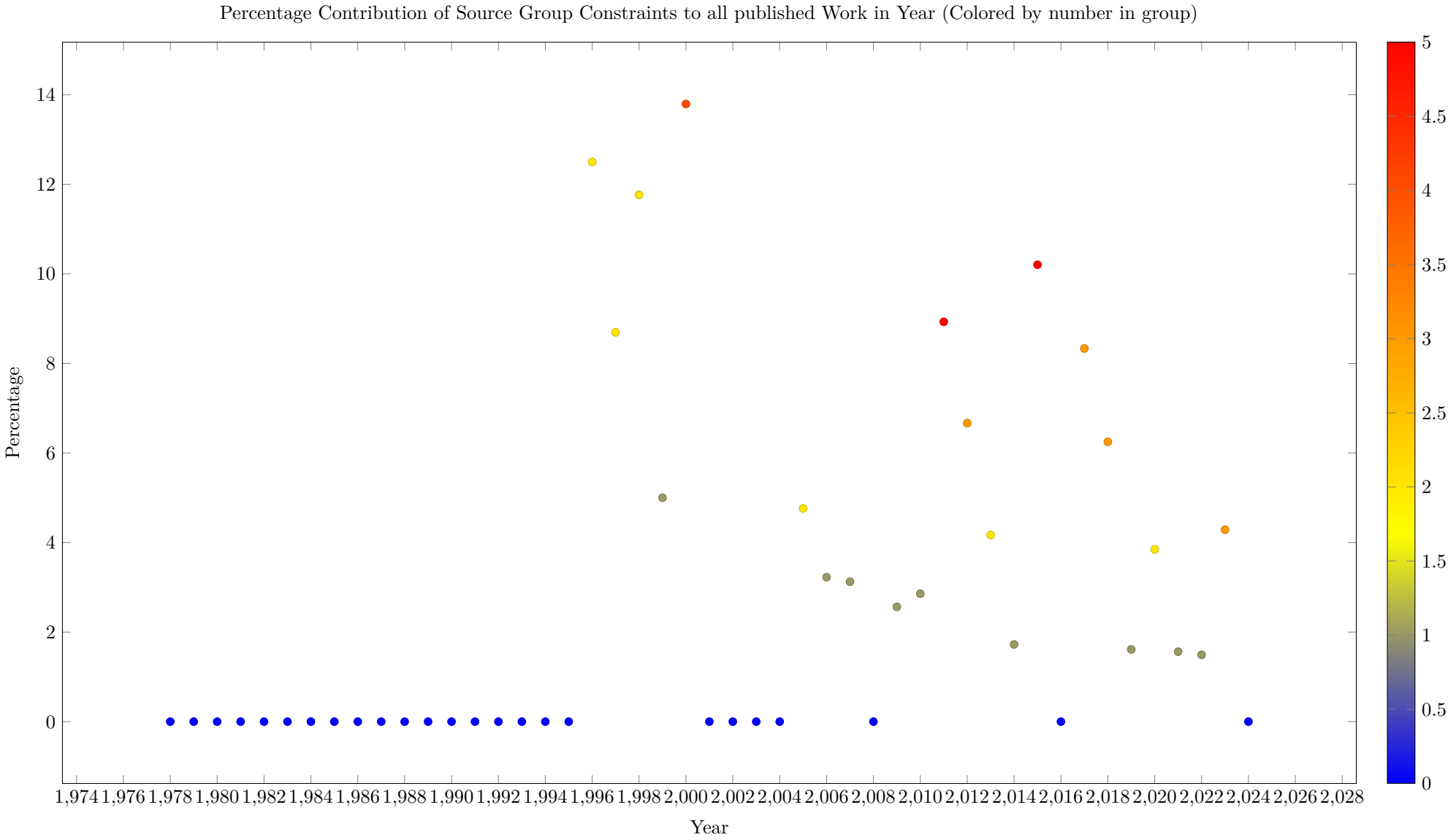
50
45
40
35
30
25
20
15
10
5
0
−5
1,974 1,976 1,978 1,980 1,982 1,984 1,986 1,988 1,990 1,992 1,994 1,996 1,998 2,000 2,002 2,004 2,006 2,008 2,010 2,012 2,014 2,016 2,018 2,020 2,022 2,024 2,026 2,028
Year
11
10
9
8
7
6
5
4
3
2
1
0


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
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1.5
2
2.5
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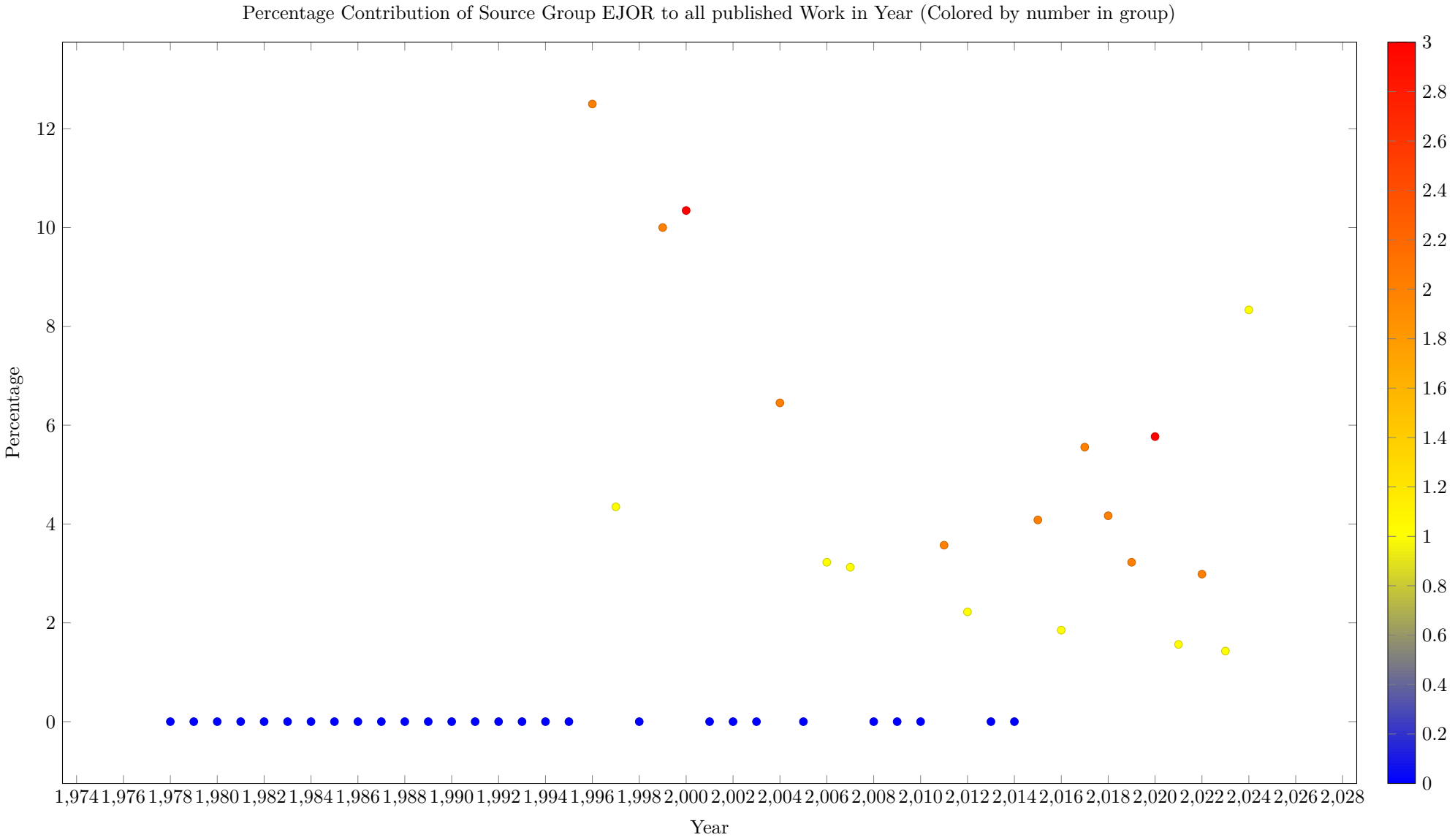
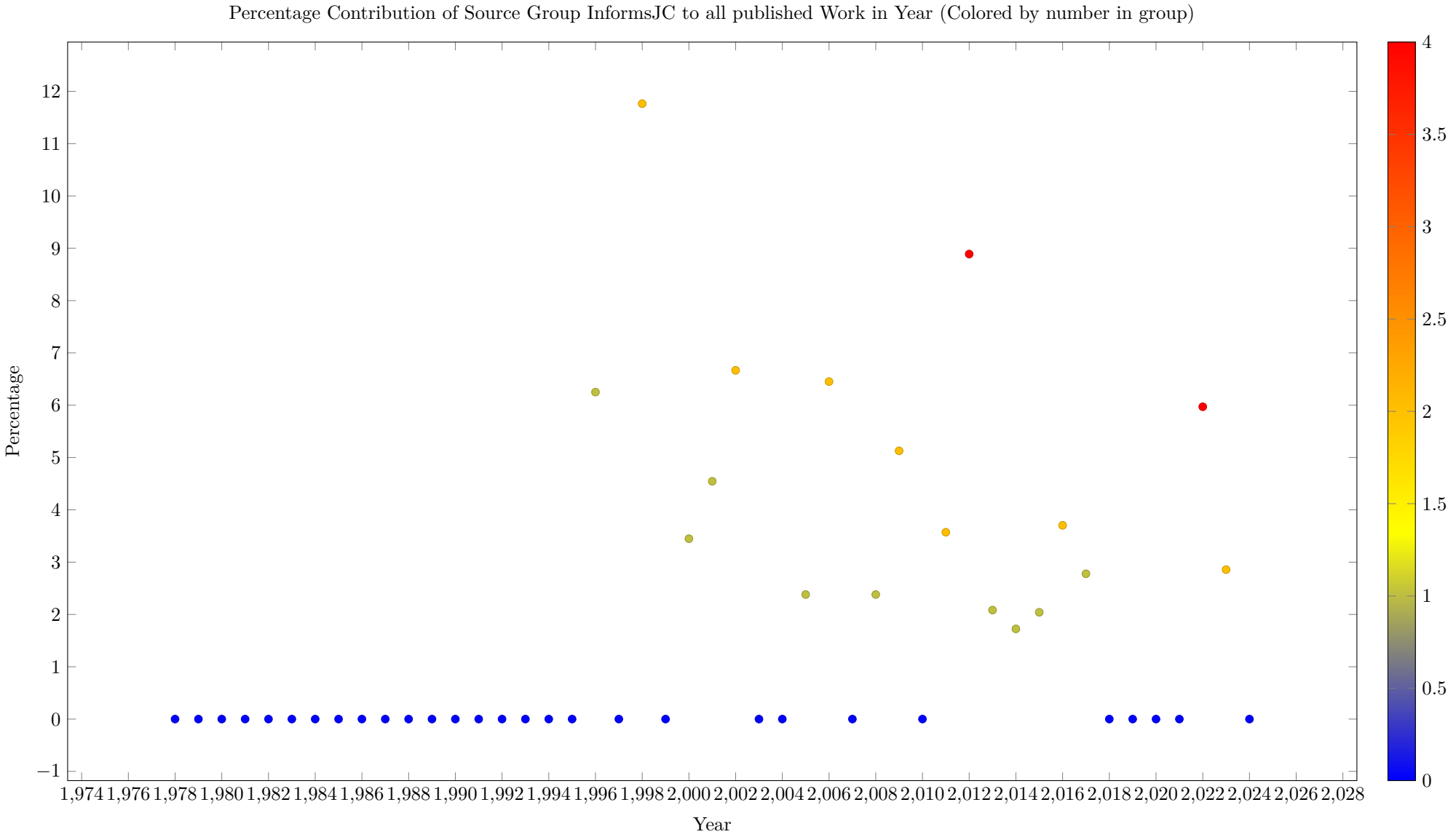
3.5
4
4.5
5


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
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
Year
4
3.5
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2.5
2
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0.5
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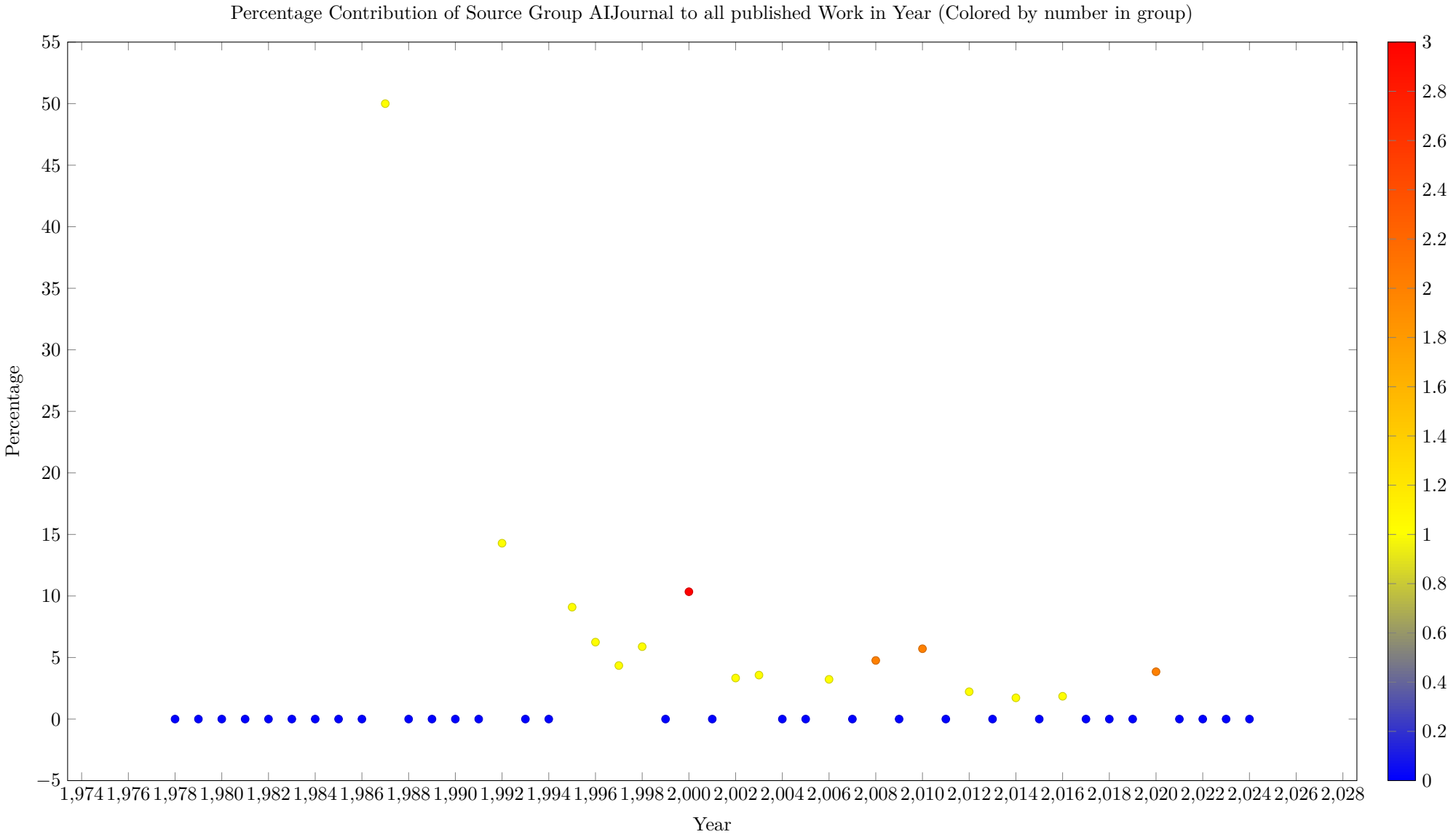
Percentage Contribution of Source Group AIJournal to all published Work in Year (Colored by number in group)
Percentage
55
50
45
40
35
30
25
20
15
10
5
0
−5
Year
1,974 1,976 1,978 1,980 1,982 1,984 1,986 1,988 1,990 1,992 1,994 1,996 1,998 2,000 2,002 2,004 2,006 2,008 2,010 2,012 2,014 2,016 2,018 2,020 2,022 2,024 2,026 2,028
3
2.8
2.6
2.4
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1.4
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0.8
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0.4
0.2
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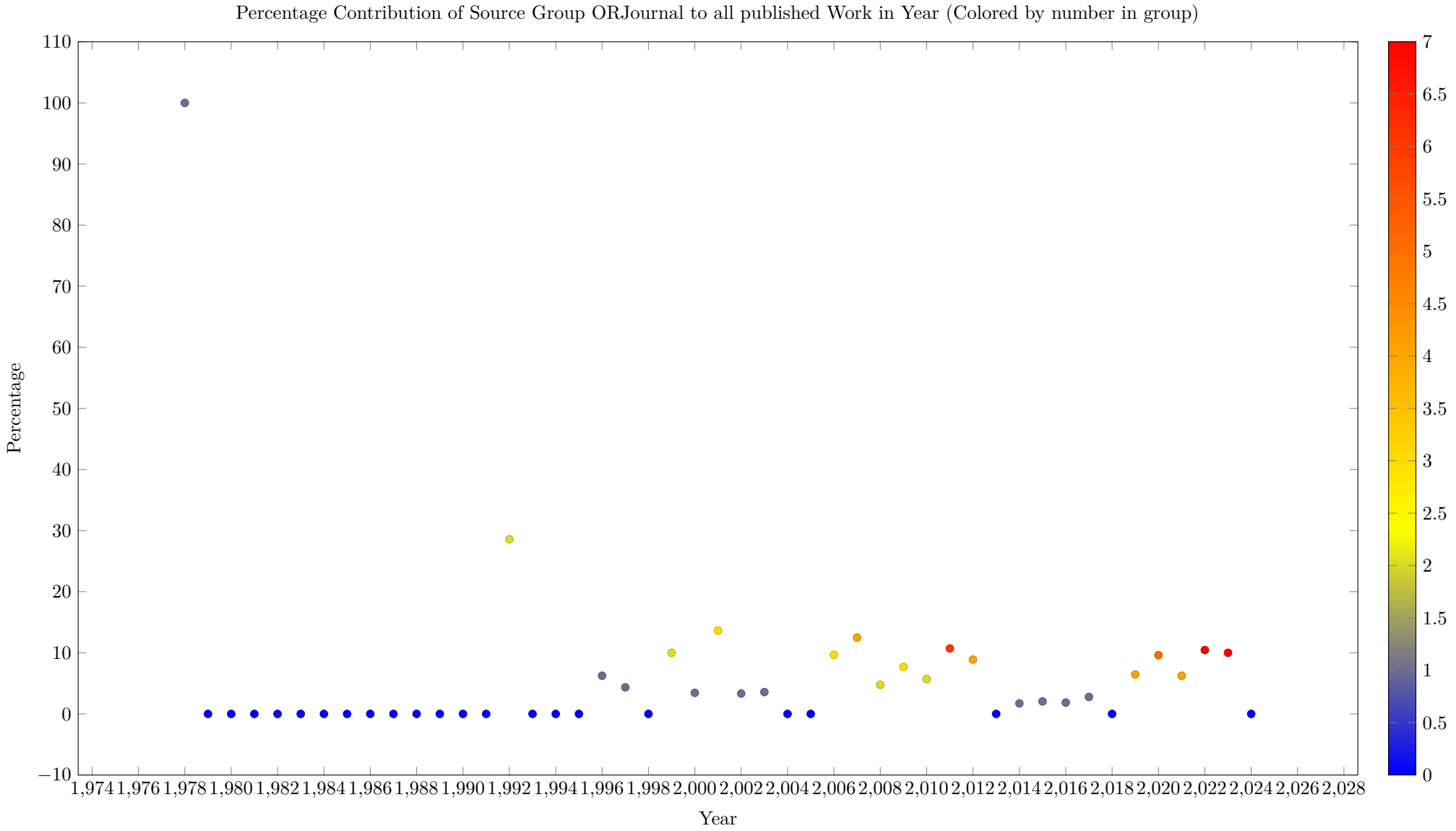
Percentage Contribution of Source Group ORJournal to all published Work in Year (Colored by number in group)
Percentage
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100
90
80
70
60
50
40
30
20
10
0
−10
Year
1,974 1,976 1,978 1,980 1,982 1,984 1,986 1,988 1,990 1,992 1,994 1,996 1,998 2,000 2,002 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
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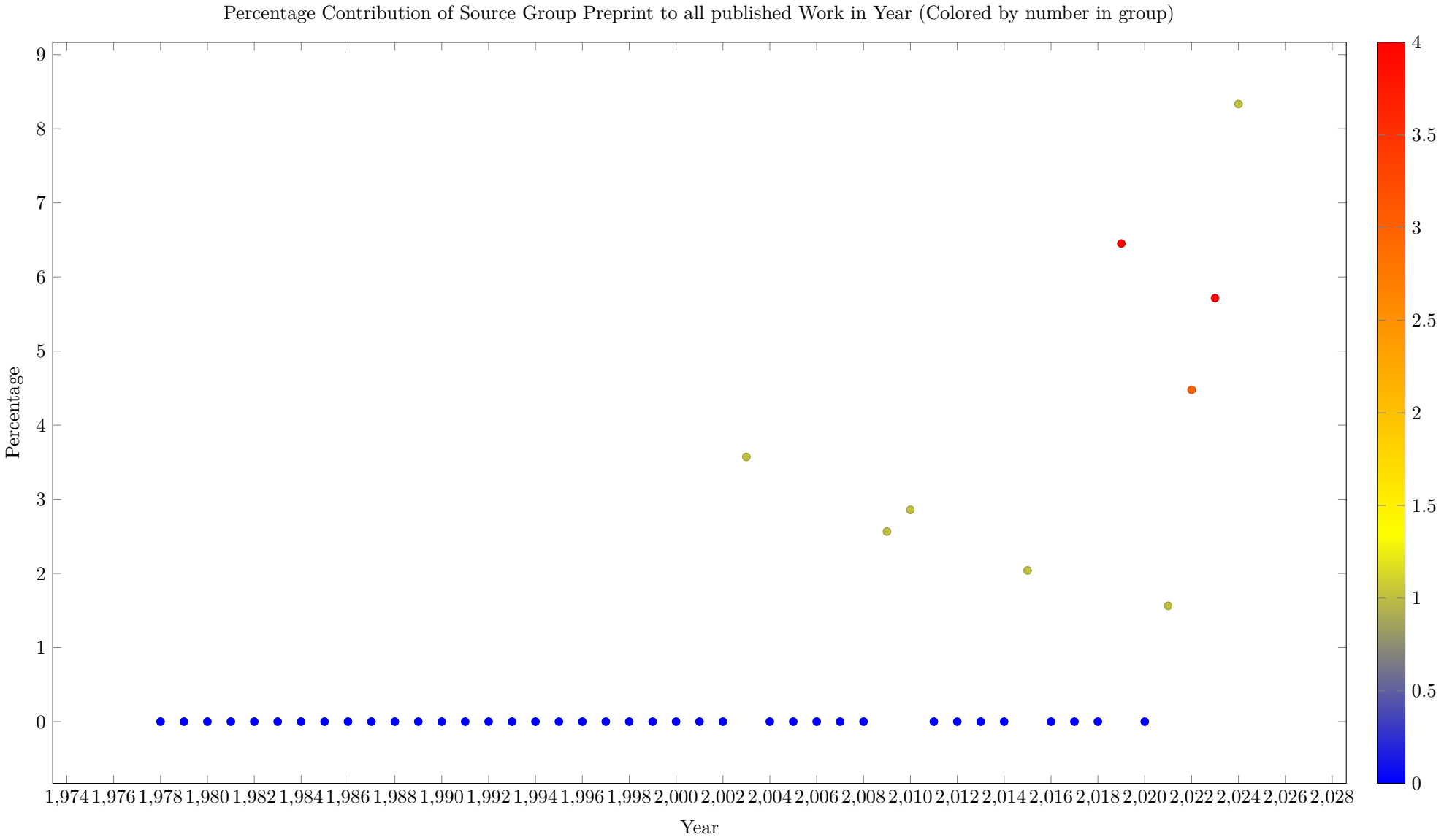
Percentage Contribution of Source Group Preprint to all published Work in Year (Colored by number in group)
Percentage
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2
3
4
5
6
7
8
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Year
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1,976
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
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2,008
2,010
2,012
2,014
2,016
2,018
2,020
2,022
2,024
2,026
2,028
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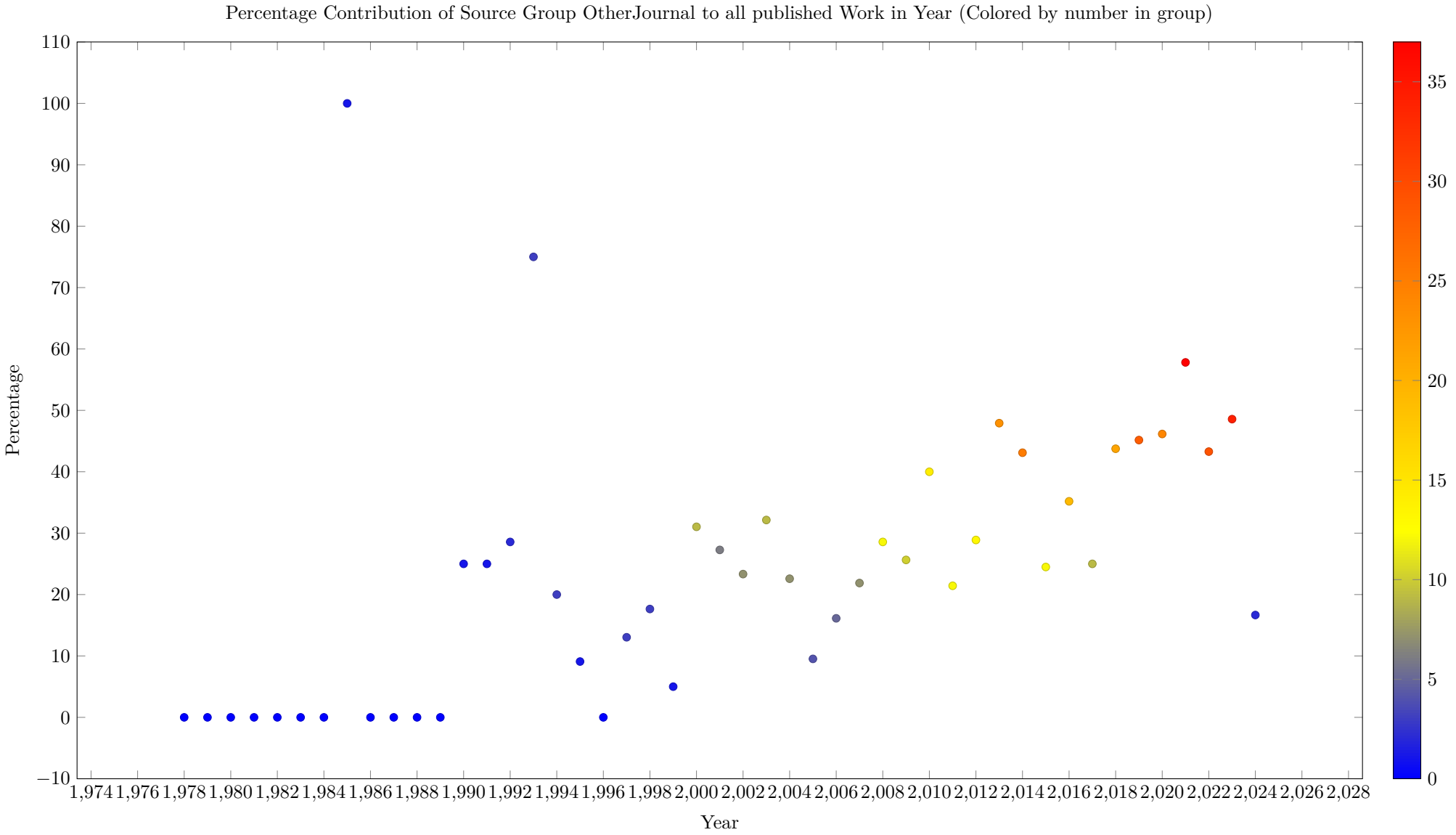
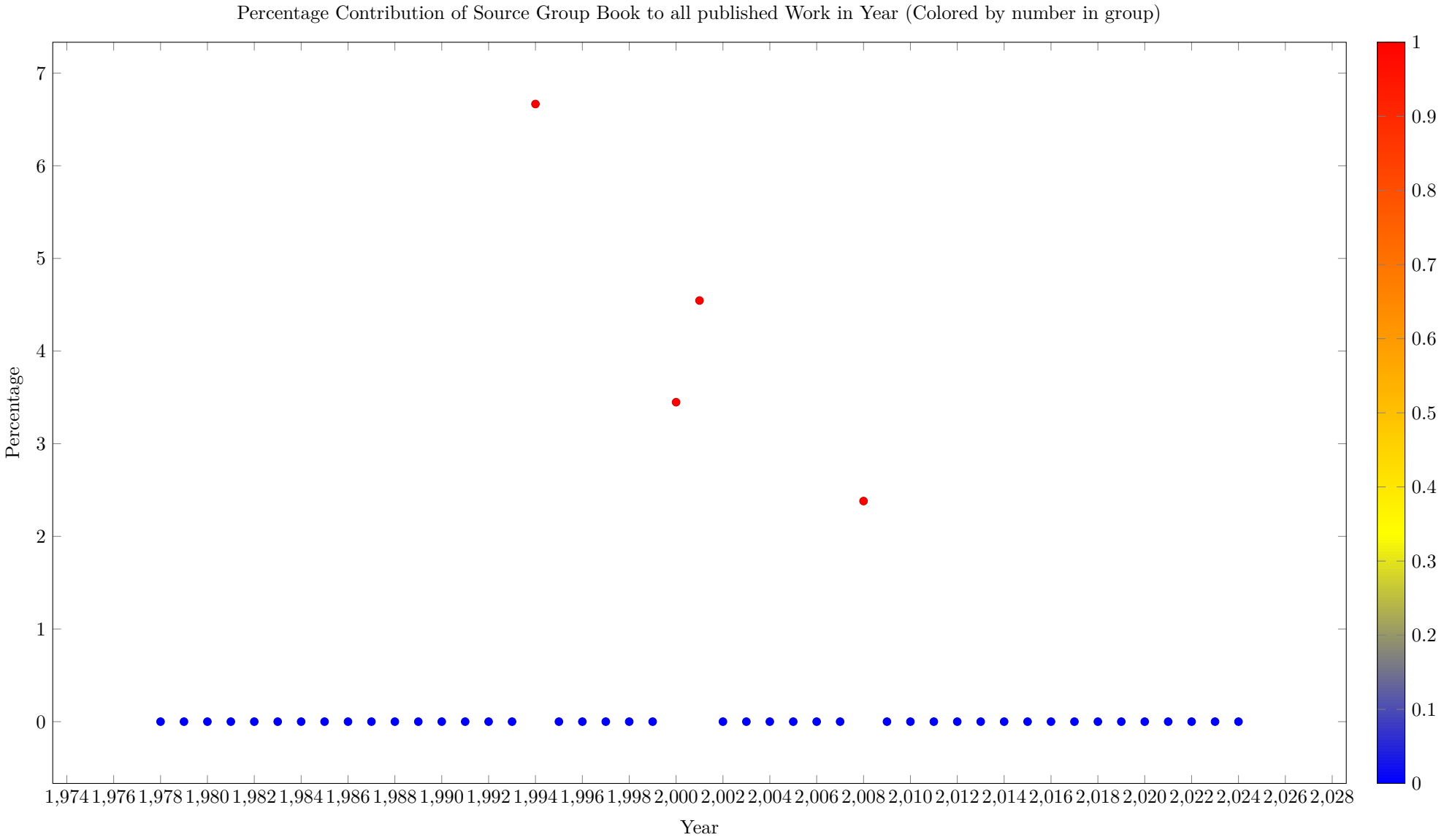
1.5
2
2.5
3
3.5
4


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
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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
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0.2
0.3
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0.6
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0.9
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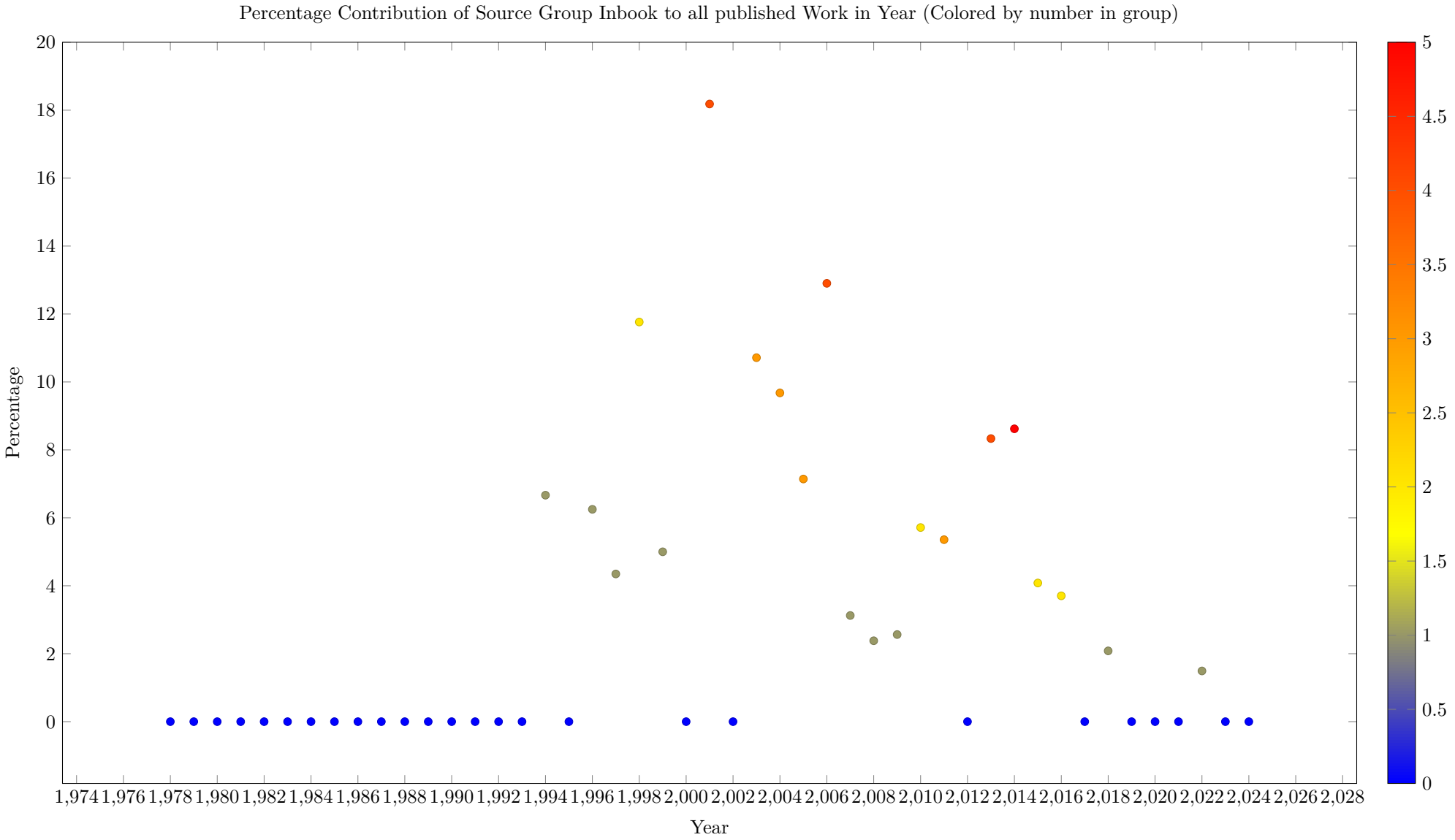
Percentage Contribution of Source Group Inbook to all published Work in Year (Colored by number in group)
Percentage
Year
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2
4
6
8
10
12
14
16
18
20
1,974 1,976 1,978 1,980 1,982 1,984 1,986 1,988 1,990 1,992 1,994 1,996 1,998 2,000 2,002 2,004 2,006 2,008 2,010 2,012 2,014 2,016 2,018 2,020 2,022 2,024 2,026 2,028
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2.5
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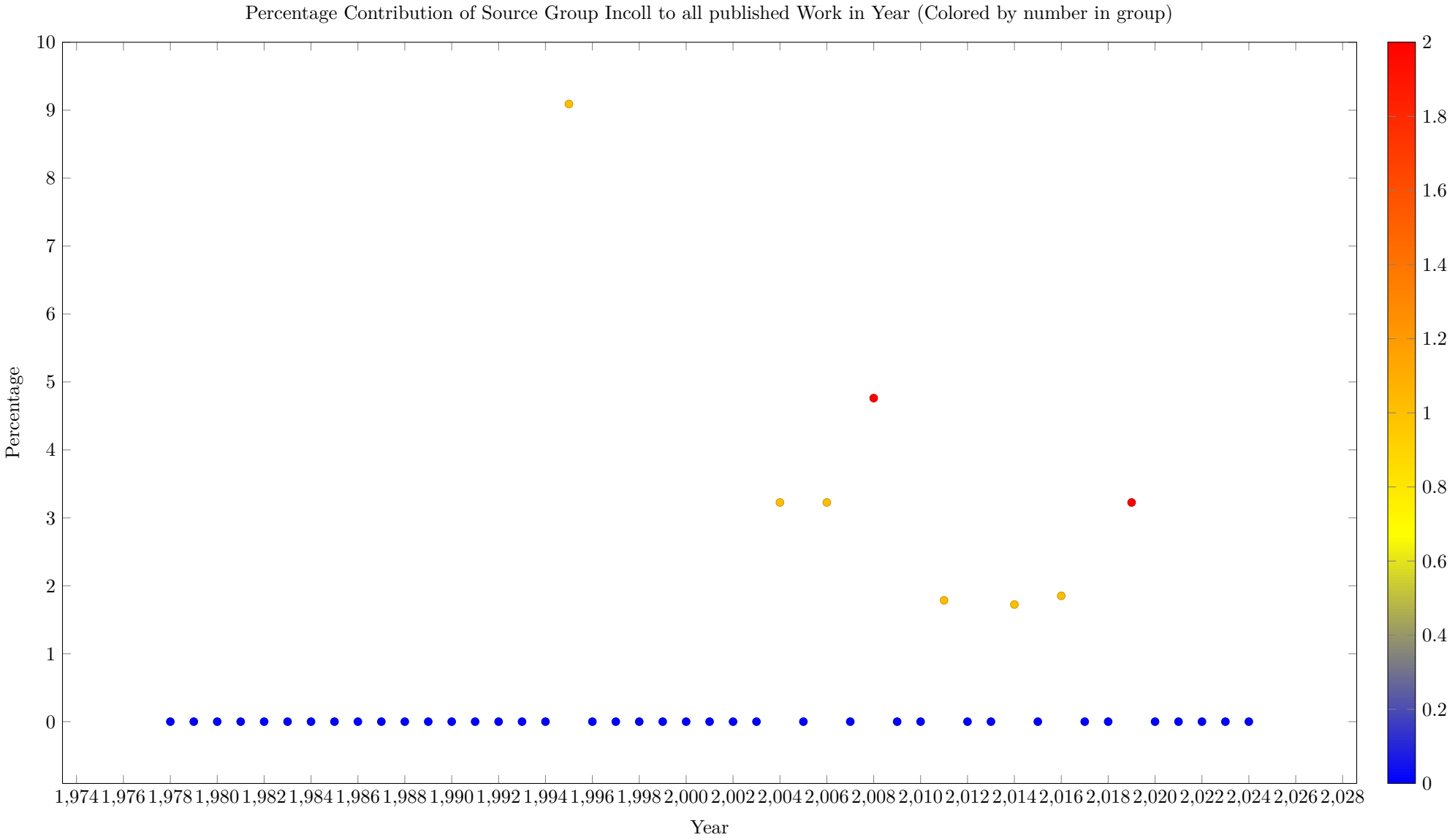
Percentage Contribution of Source Group Incoll to all published Work in Year (Colored by number in group)
Percentage
Year
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4
5
6
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2,016
2,018
2,020
2,022
2,024
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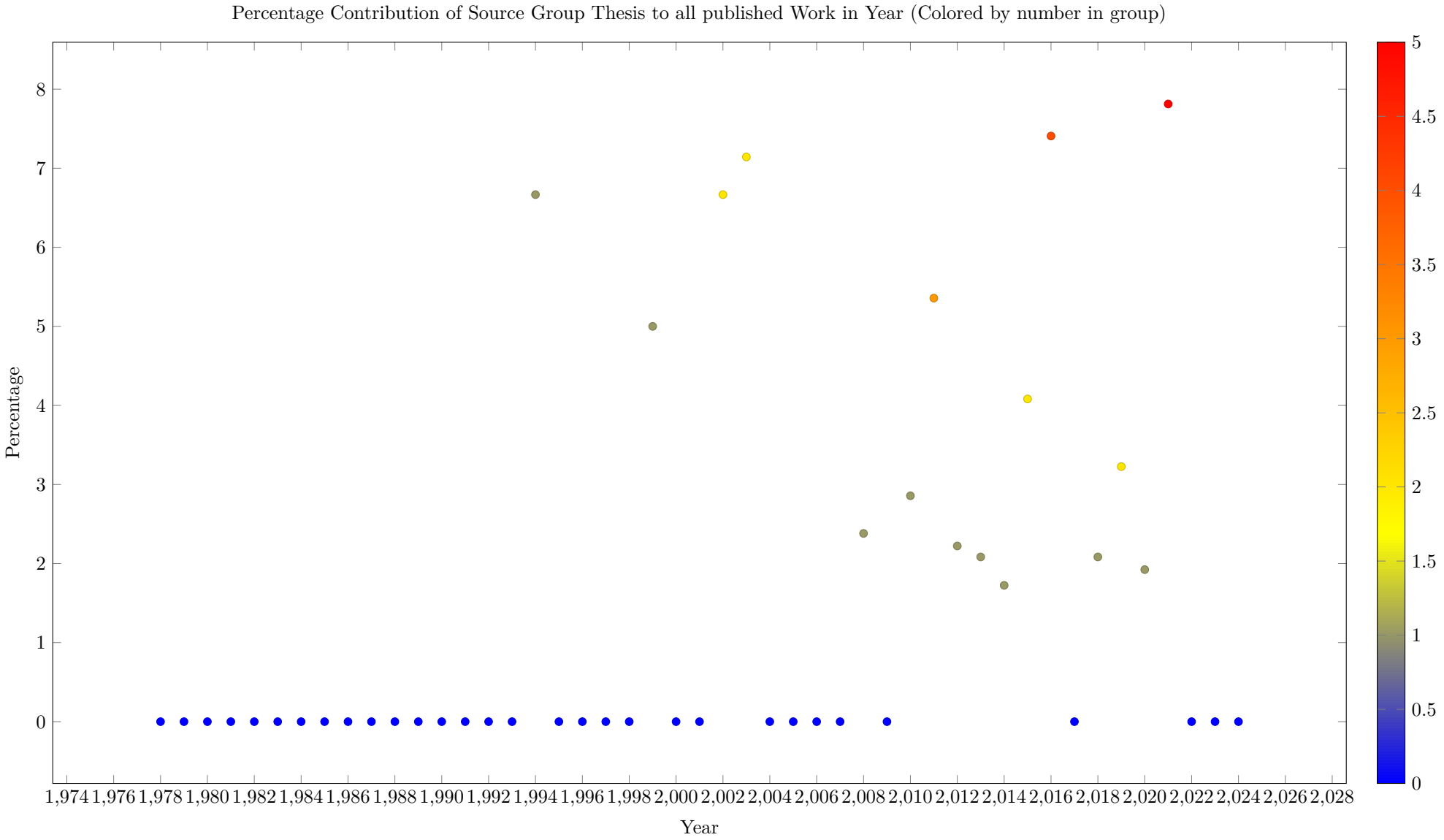
Percentage Contribution of Source Group Thesis to all published Work in Year (Colored by number in group)
Percentage
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2
3
4
5
6
7
8
Year
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1,978
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2,008
2,010
2,012
2,014
2,016
2,018
2,020
2,022
2,024
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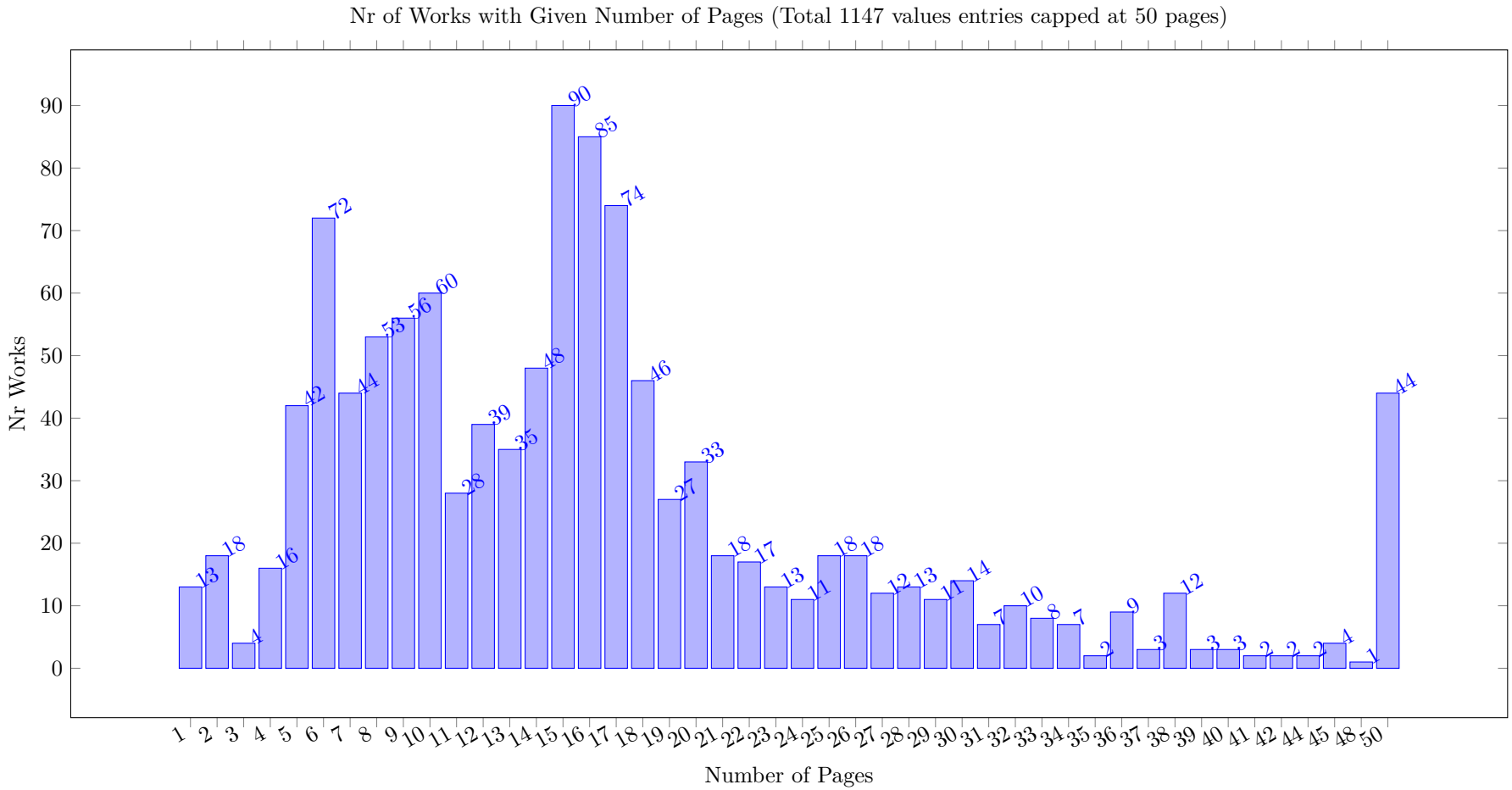
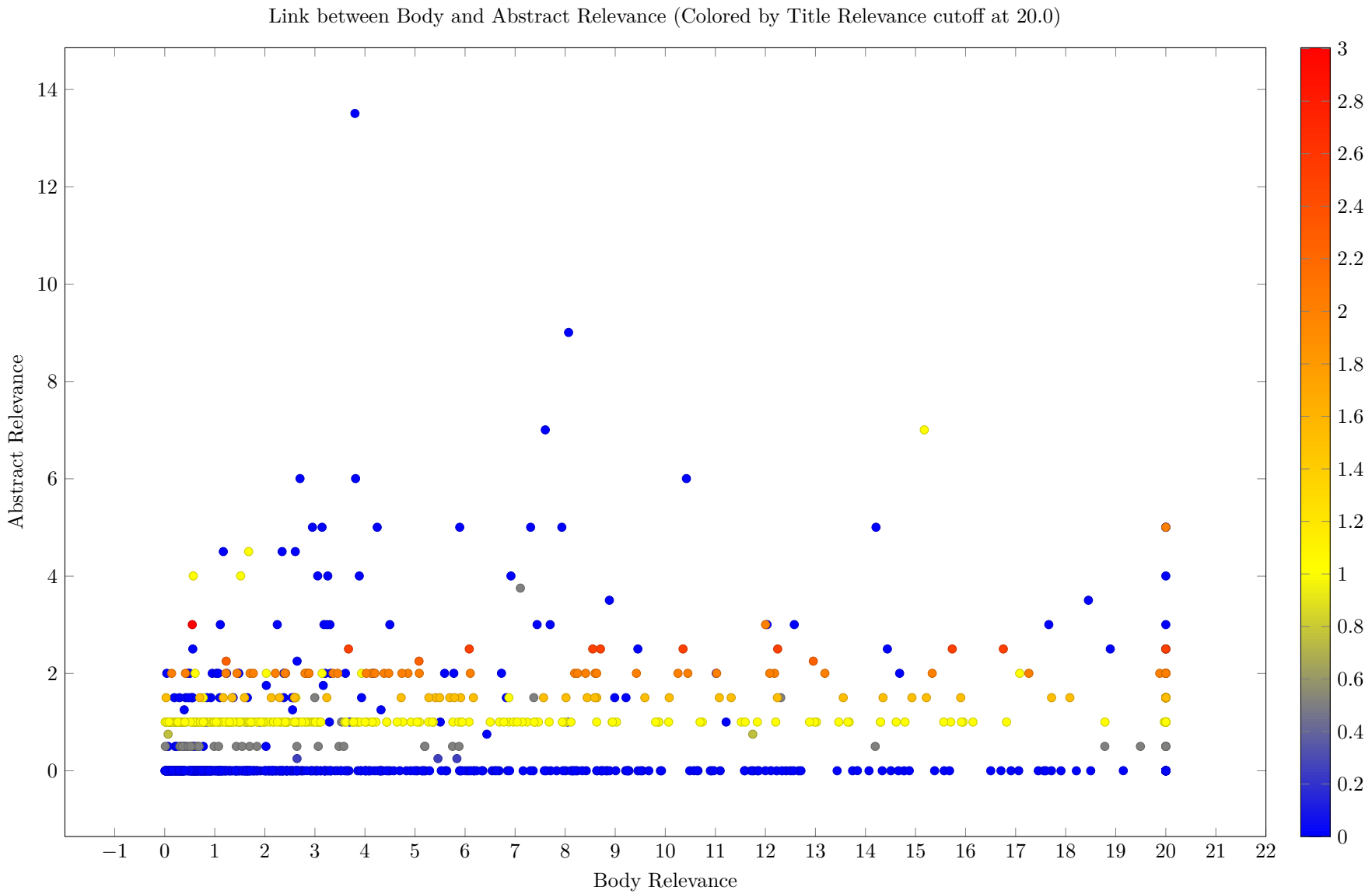
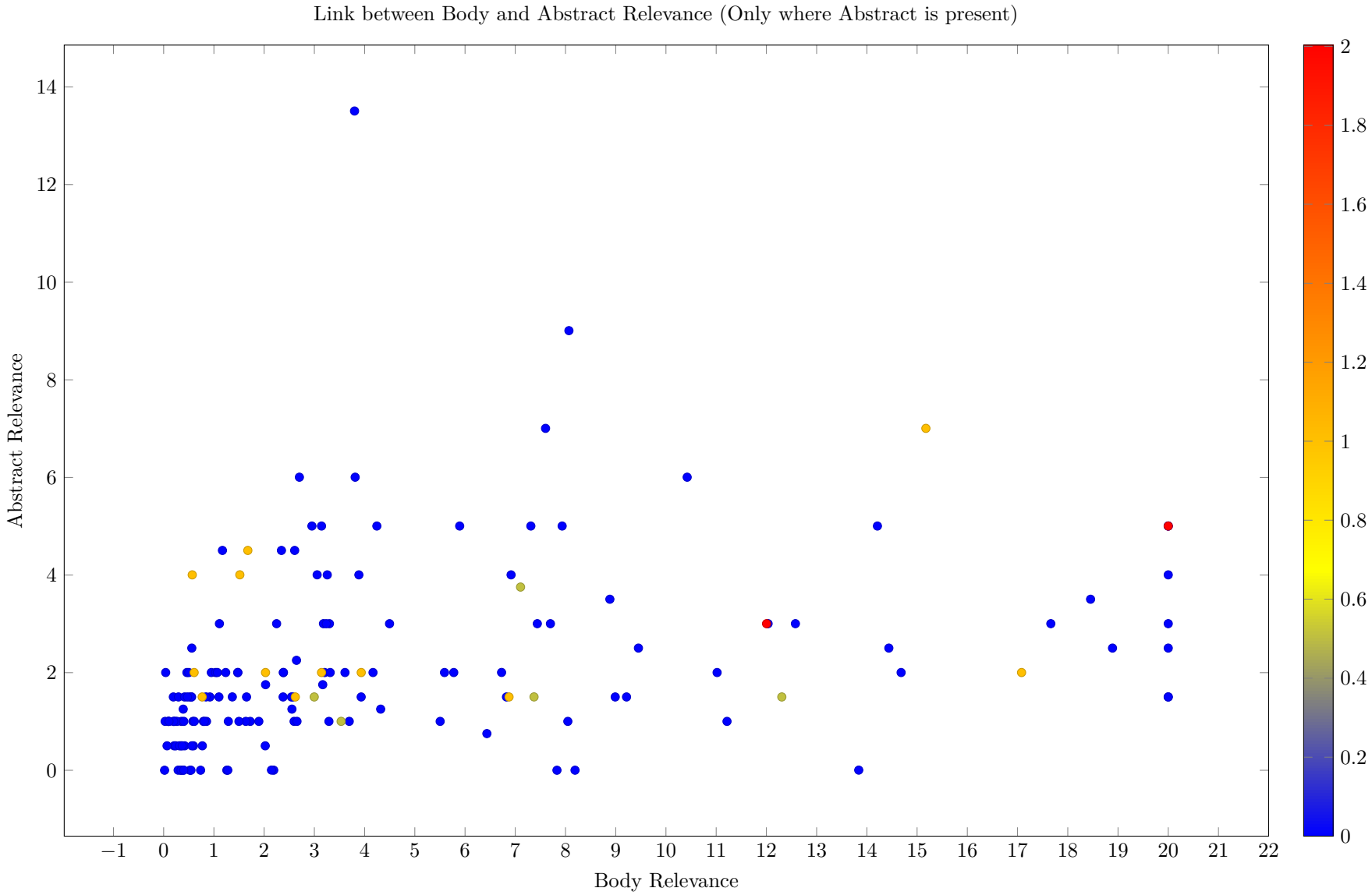
3
3.5
4
4.5
5

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
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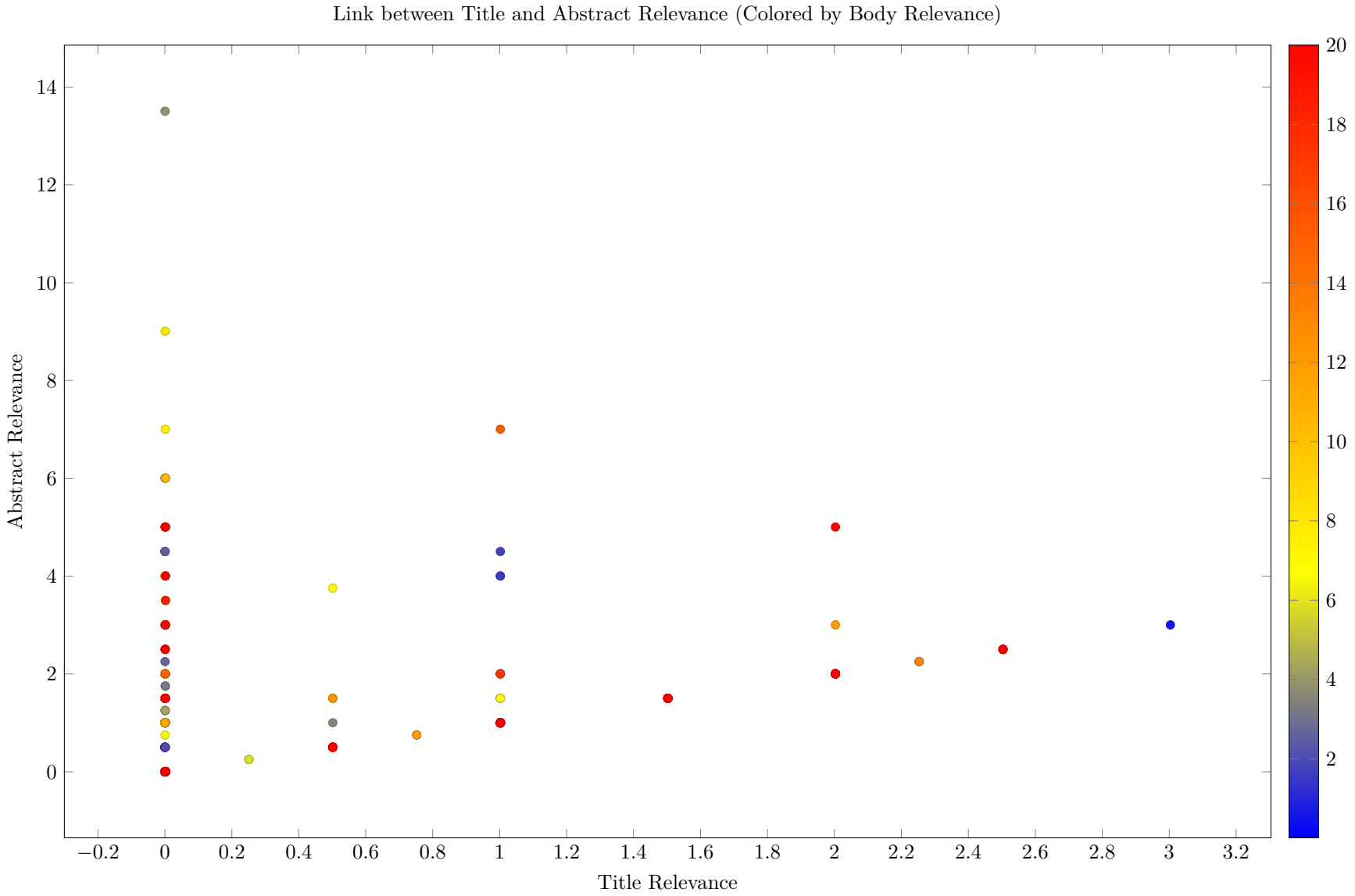
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8
2


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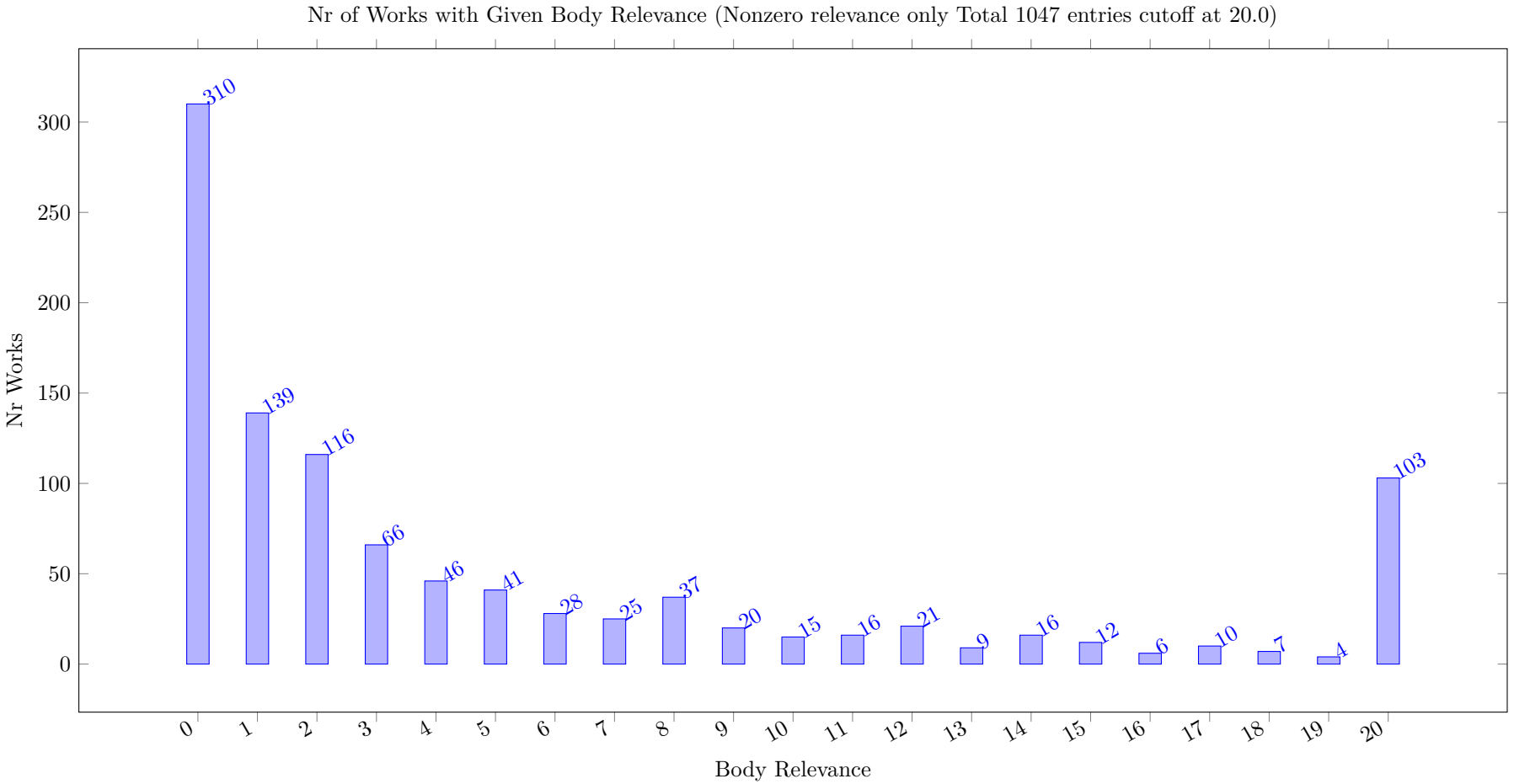
4
6
8
10
12
14
−0.2
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8
2
2.2
2.4
2.6
2.8
3
3.2
2
4
6
8
10
12
14
16
18
20


Nr of Works with Given Body Relevance (Nonzero relevance only Total 1047 entries cutoff at 20.0)
Nr Works
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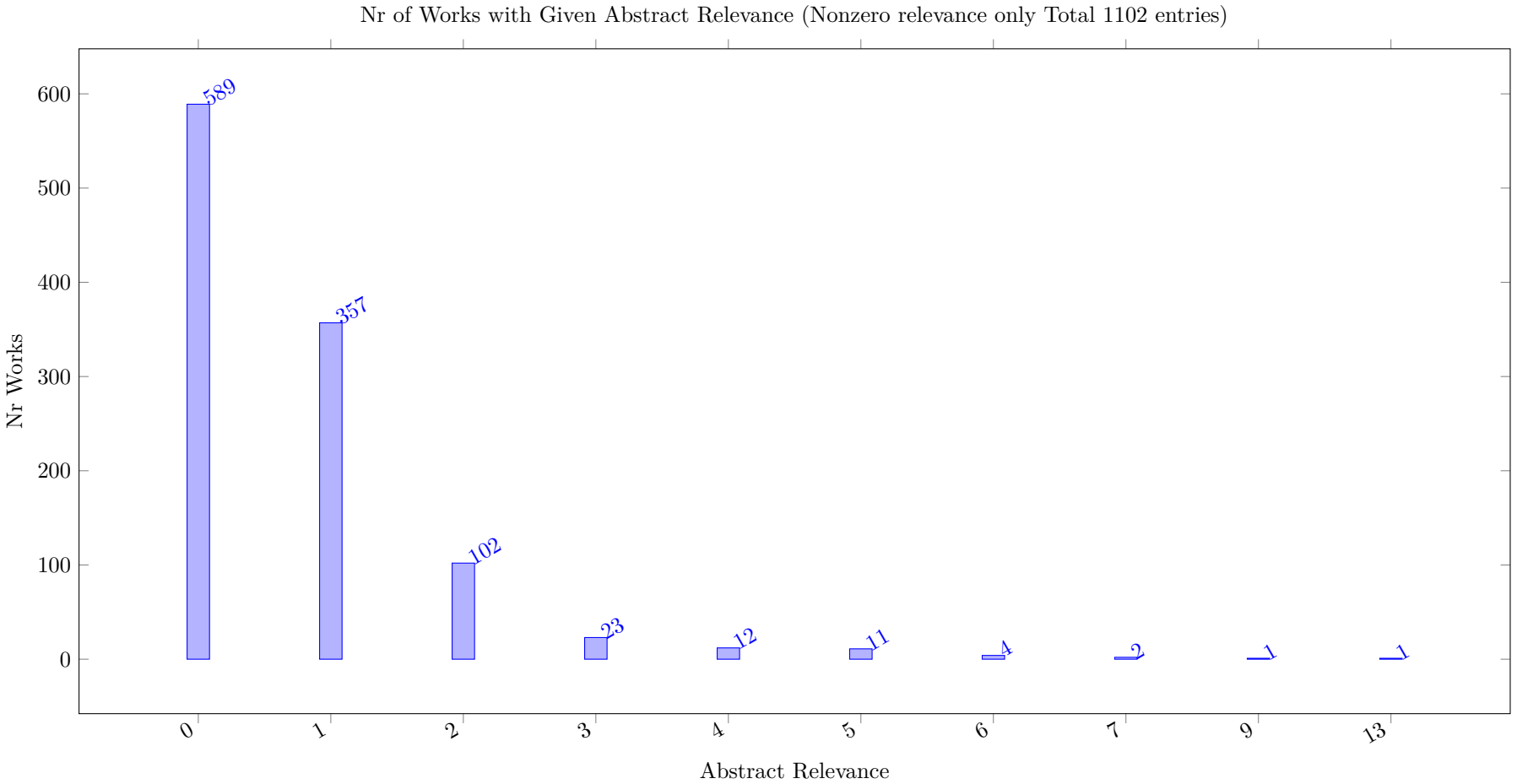
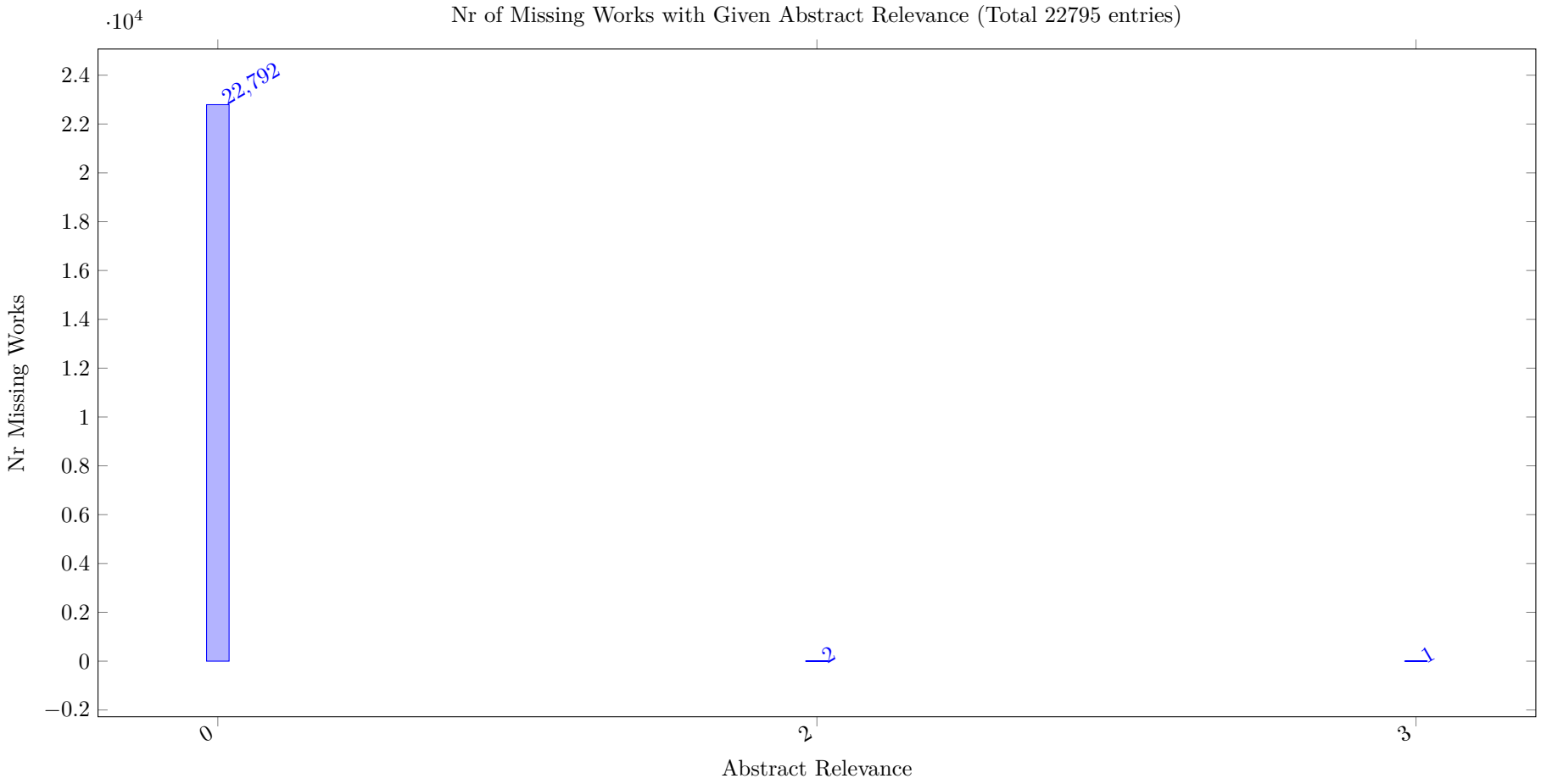
50
100
150
200
250
300
310
139
116
66
46
41
28
25
37
20
15
16
21
9
16
12
6
10
7
4
103
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
Body Relevance


Nr of Works with Given Abstract Relevance (Nonzero relevance only Total 1102 entries)
Nr Works
0
100
200
300
400
500
600
589
357
102
23
12
11
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 22795 entries)
$\cdot 10^4$
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
Nr Missing Works
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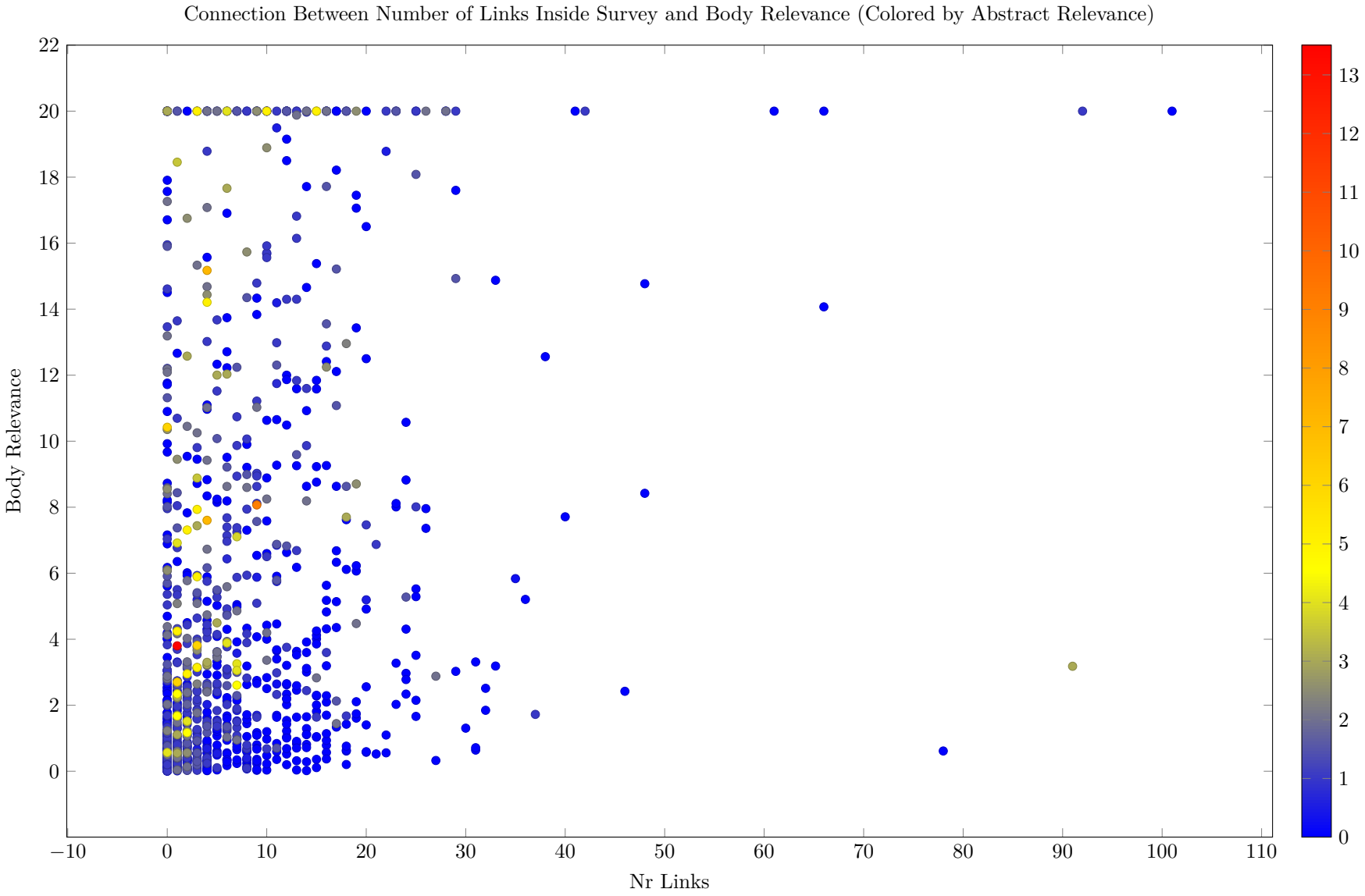
1
0
2
3
Abstract Relevance


Connection Between Number of Links Inside Survey and Body Relevance (Colored by Abstract Relevance)
Body Relevance
Nr Links
22
20
18
16
14
12
10
8
6
4
2
0
−10
0
10
20
30
40
50
60
70
80
90
100
110
13
12
11
10
9
8
7
6
5
4
3
2
1
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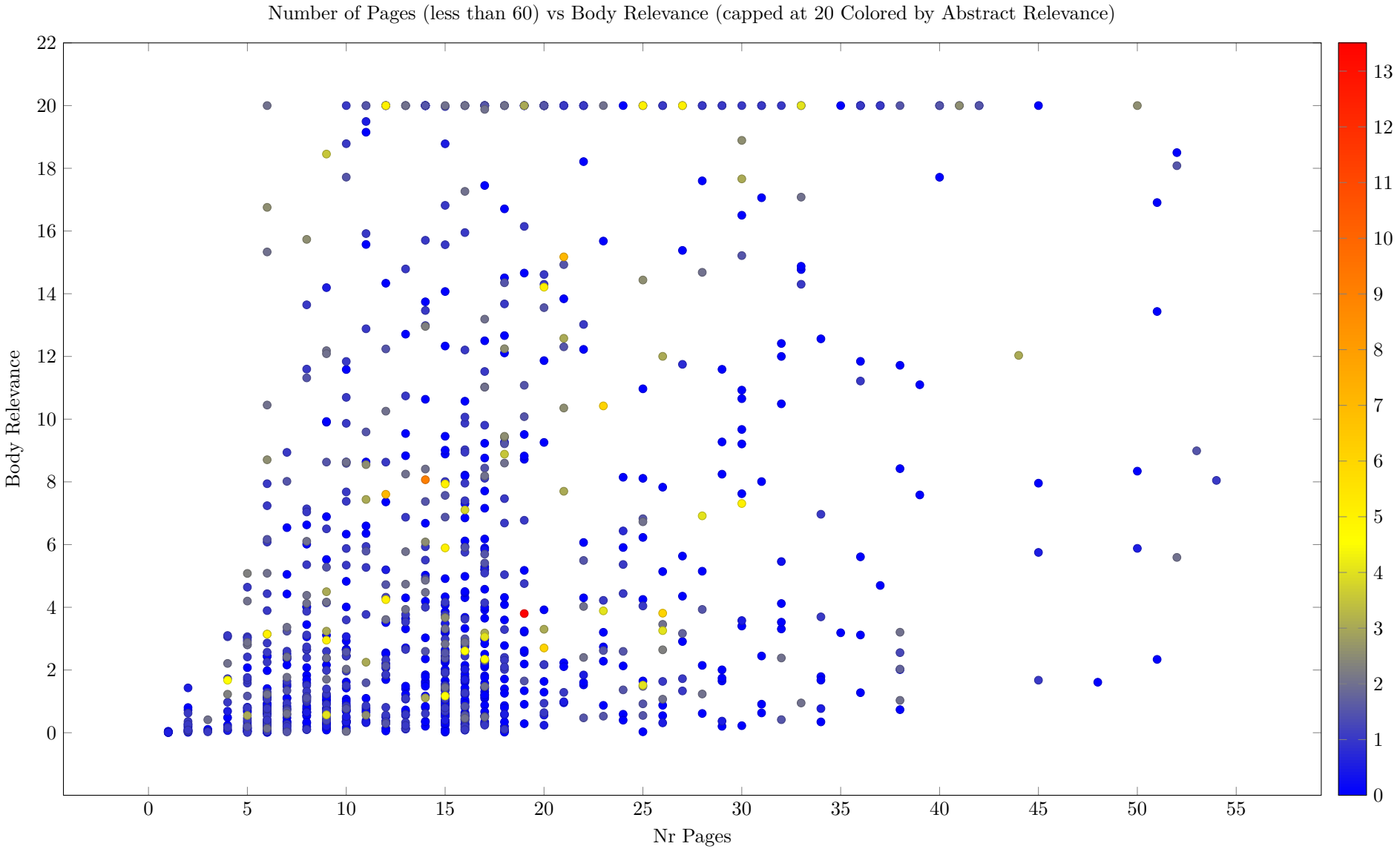
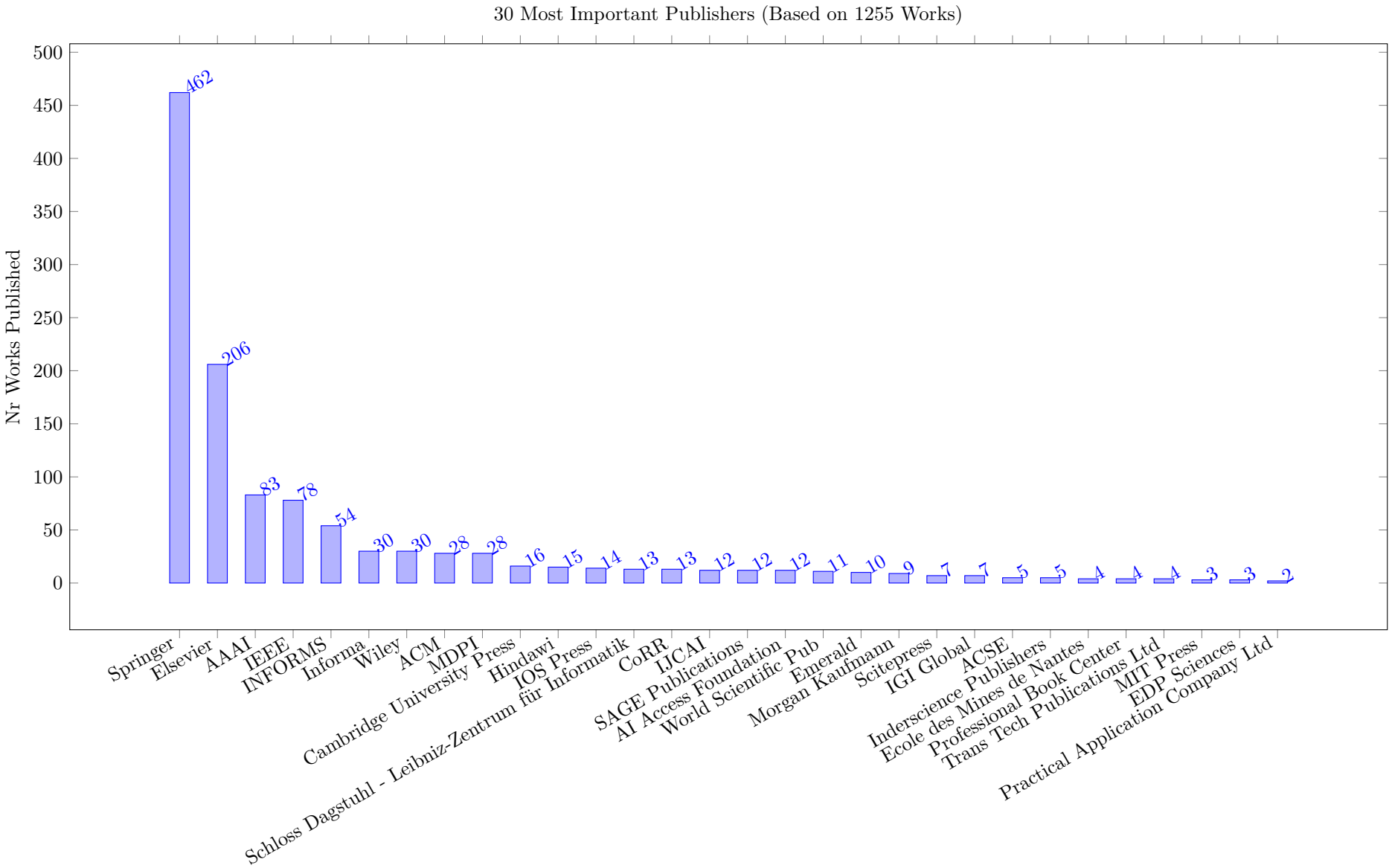
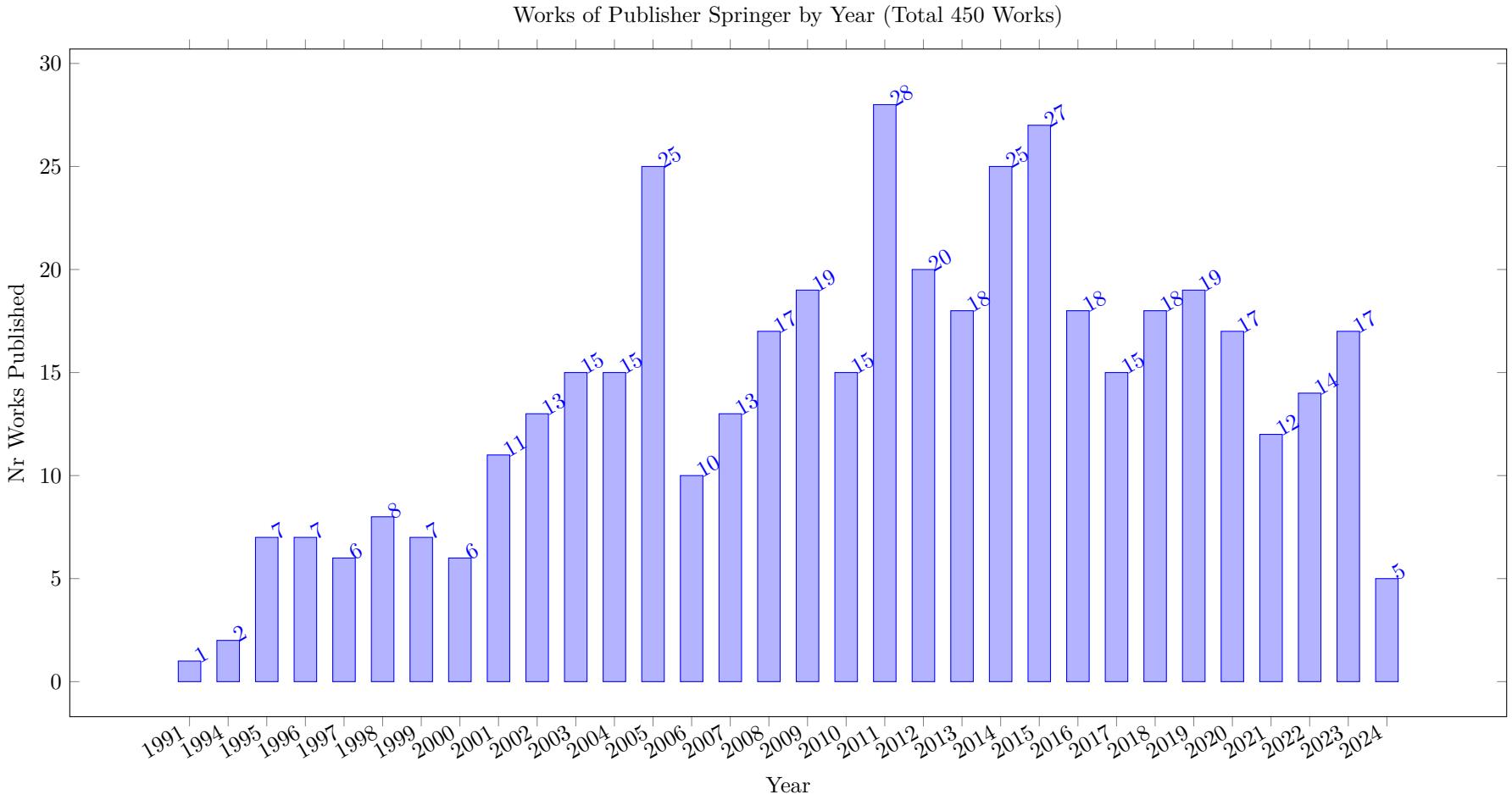
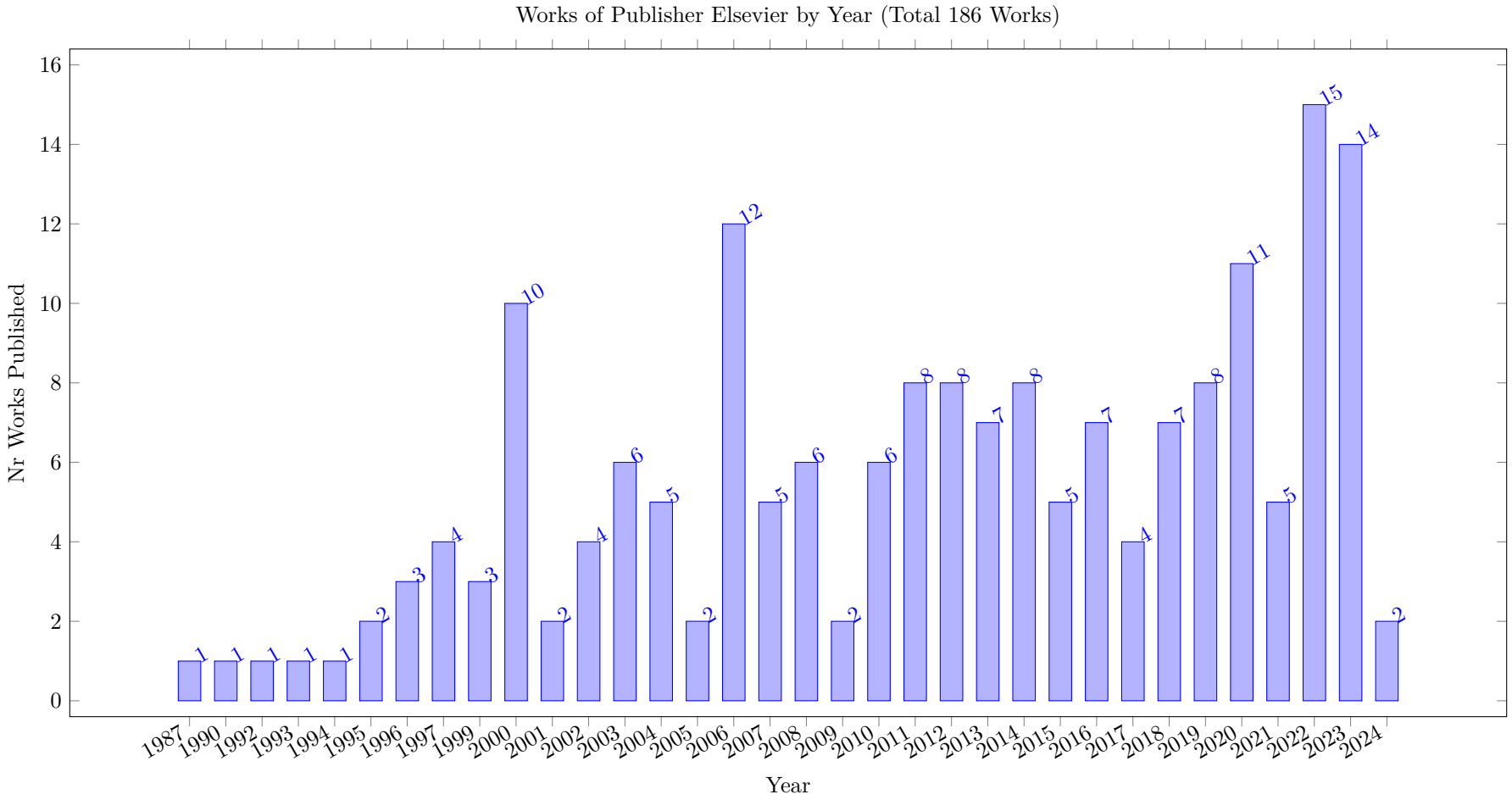
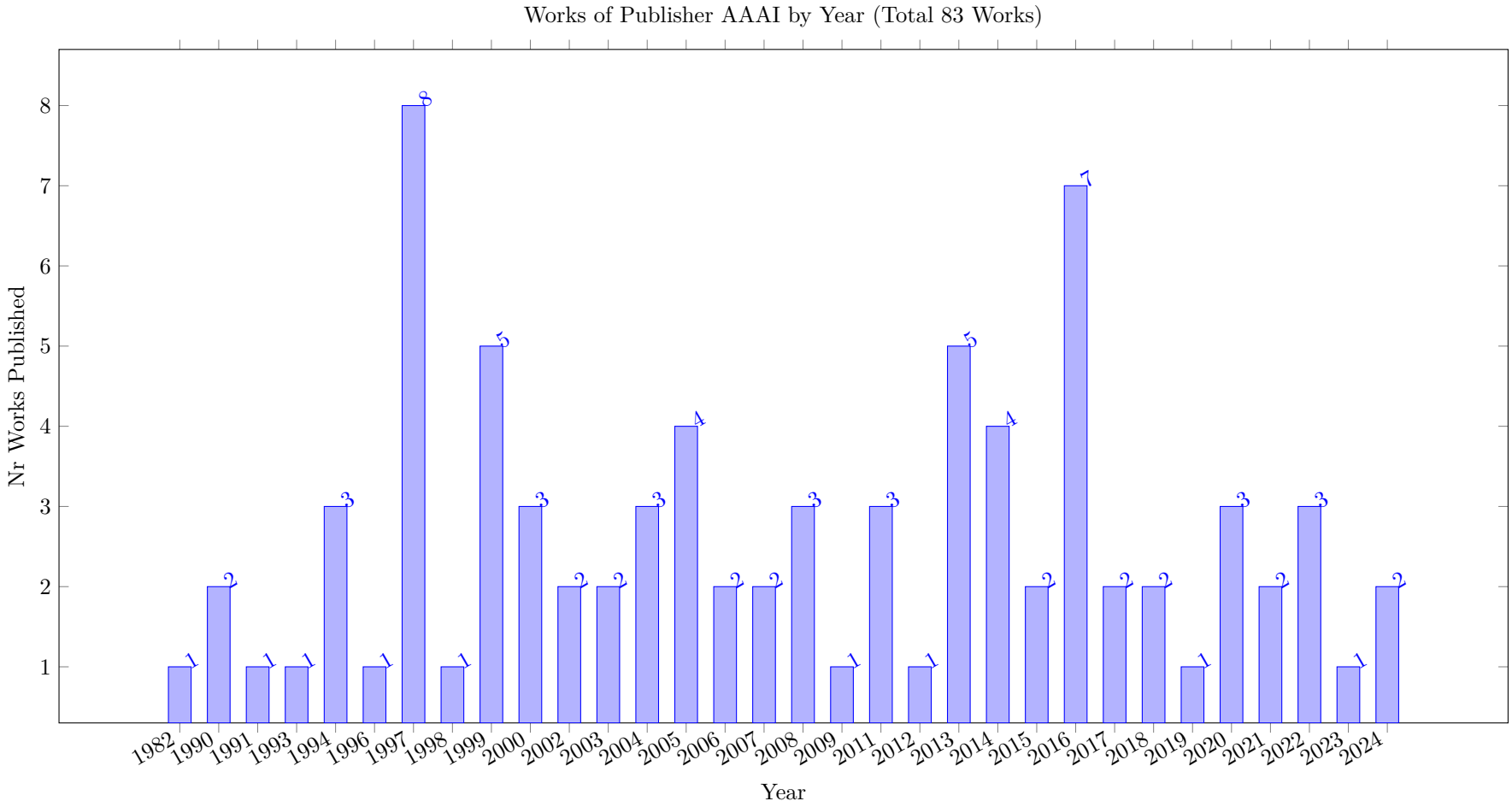

Number of Pages (less than 60) vs Body Relevance (capped at 20 Colored by Abstract Relevance)
Body Relevance
Nr Pages
0
2
4
6
8
10
12
14
16
18
20
22
0
5
10
15
20
25
30
35
40
45
50
55
0
1
2
3
4
5
6
7
8
9
10
11
12
13

19 Most Important Publishers




Works of Publisher Springer by Year (Total 450 Works)
Nr Works Published
Year
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
2011 28
2012 20
2013 18
2014 25
2015 27
2016 18
2017 15
2018 18
2019 19
2020 17
2021 12
2022 14
2023 17
2024 5


Works of Publisher Elsevier by Year (Total 186 Works)
Nr Works Published
Year
0
2
4
6
8
10
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
1 1 1 1 1 2 3 4 3 10 2 4 6 5 2 12 5 6 2 6 8 8 7 8 5 7 4 7 8 11 5 15 14 2


Works of Publisher AAAI by Year (Total 83 Works)
Nr Works Published
Year
1
2
3
4
5
6
7
8
1982
1990
1991
1993
1994
1996
1997
1998
1999
2000
2002
2003
2004
2005
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2012
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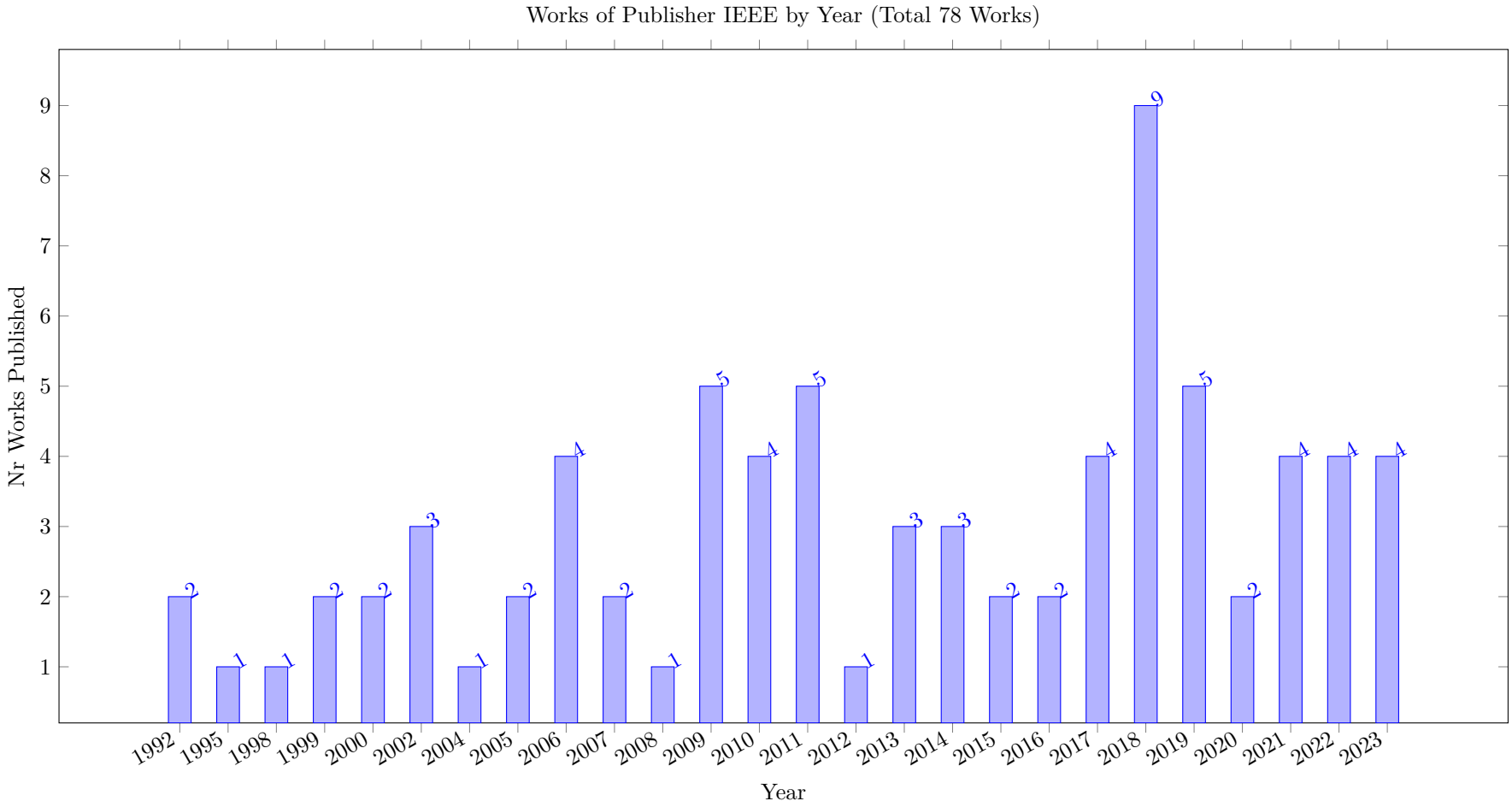
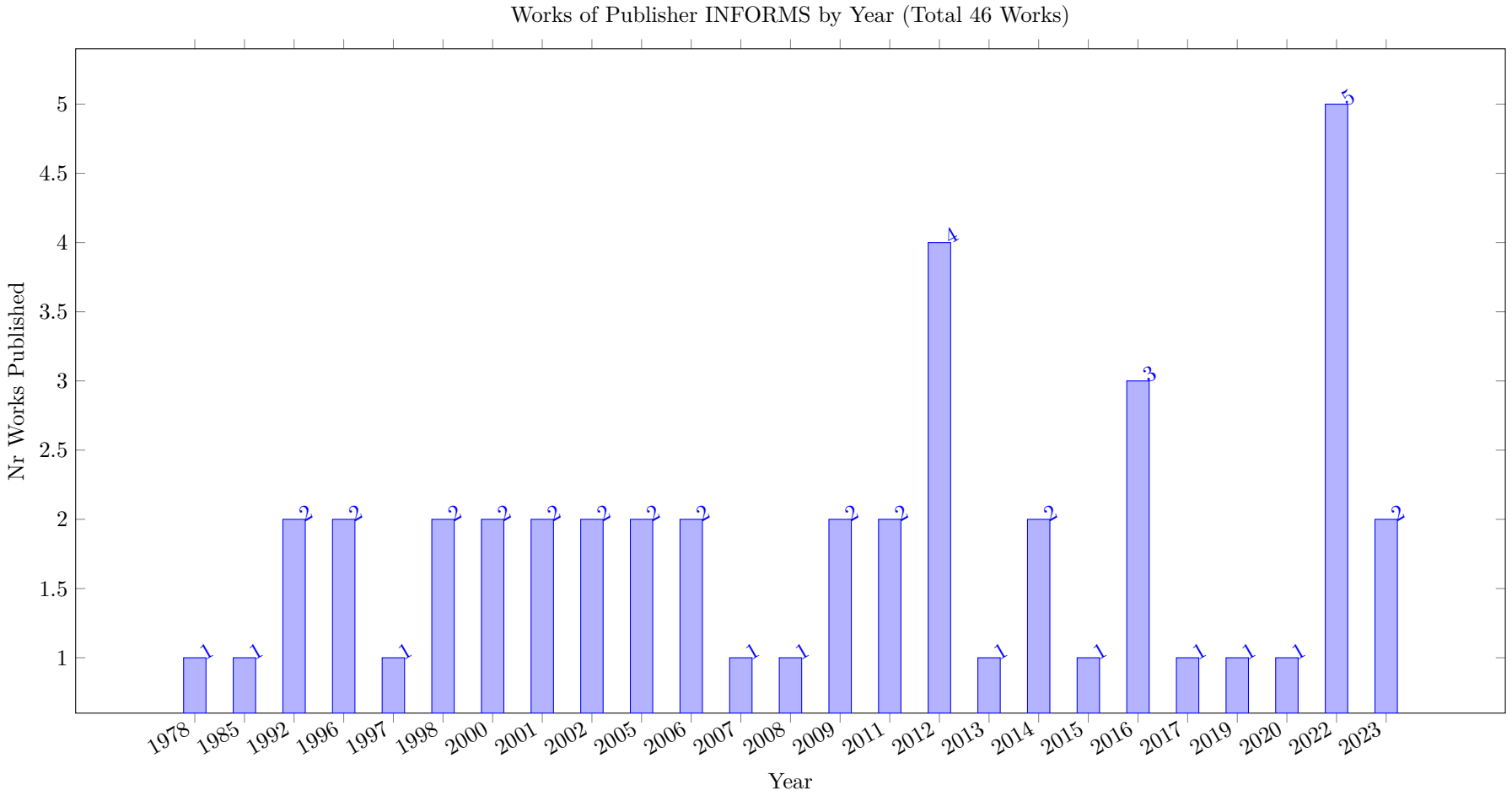
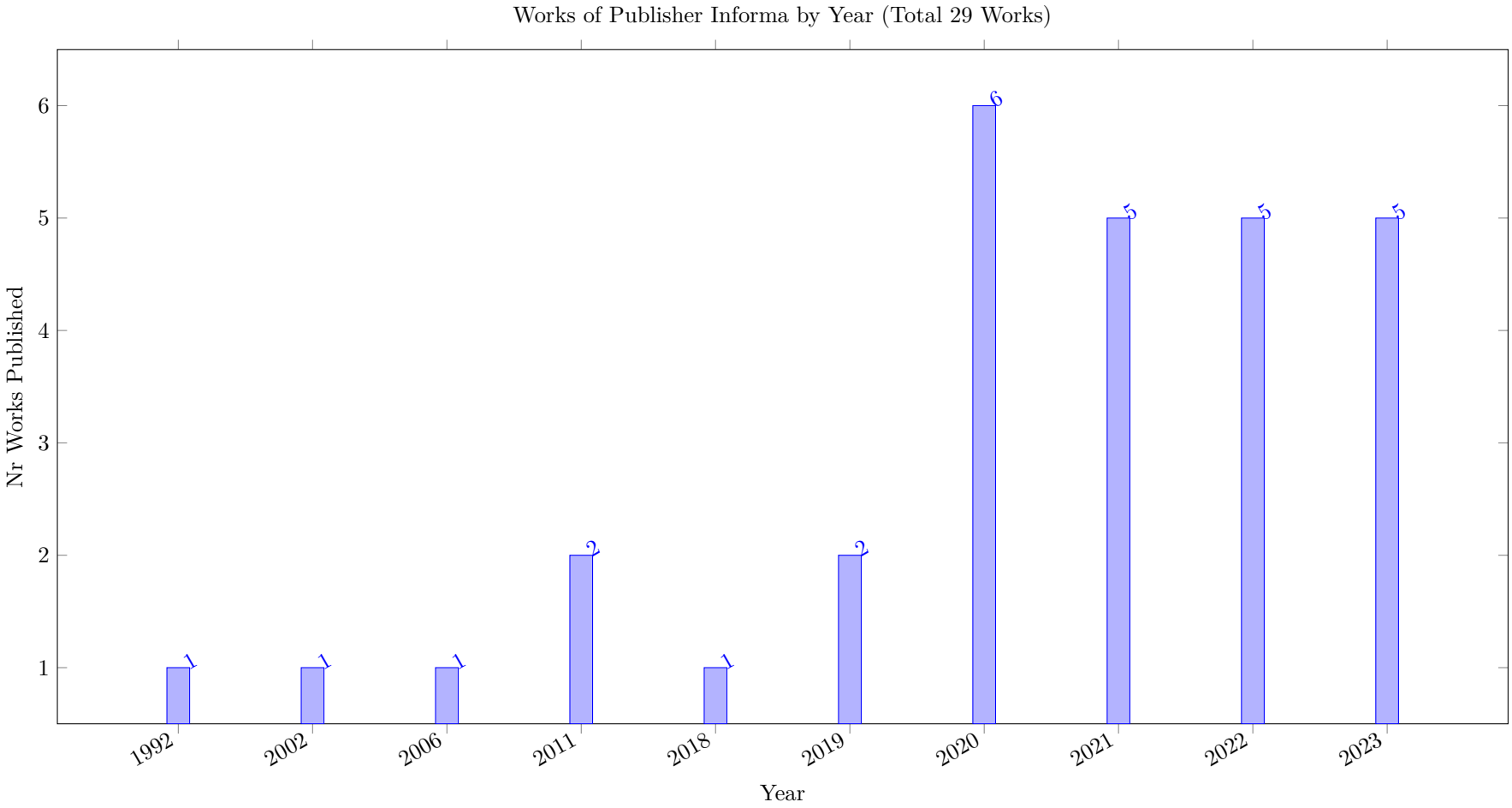
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024


Works of Publisher IEEE by Year (Total 78 Works)
Nr Works Published
Year
1 2 3 4 5 6 7 8 9
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
2 1 1 2 2 3 1 2 4 2 1 5 4 5 1 3 3 2 2 4 9 5 2 4 4 4


Works of Publisher INFORMS by Year (Total 46 Works)
Nr Works Published
Year
1
1.5
2
2.5
3
3.5
4
4.5
5
1978
1985
1992
1996
1997
1998
2000
2001
2002
2005
2006
2007
2008
2009
2011
2012
2013
2014
2015
2016
2017
2019
2020
2022
2023


Works of Publisher Informa by Year (Total 29 Works)
Nr Works Published
Year
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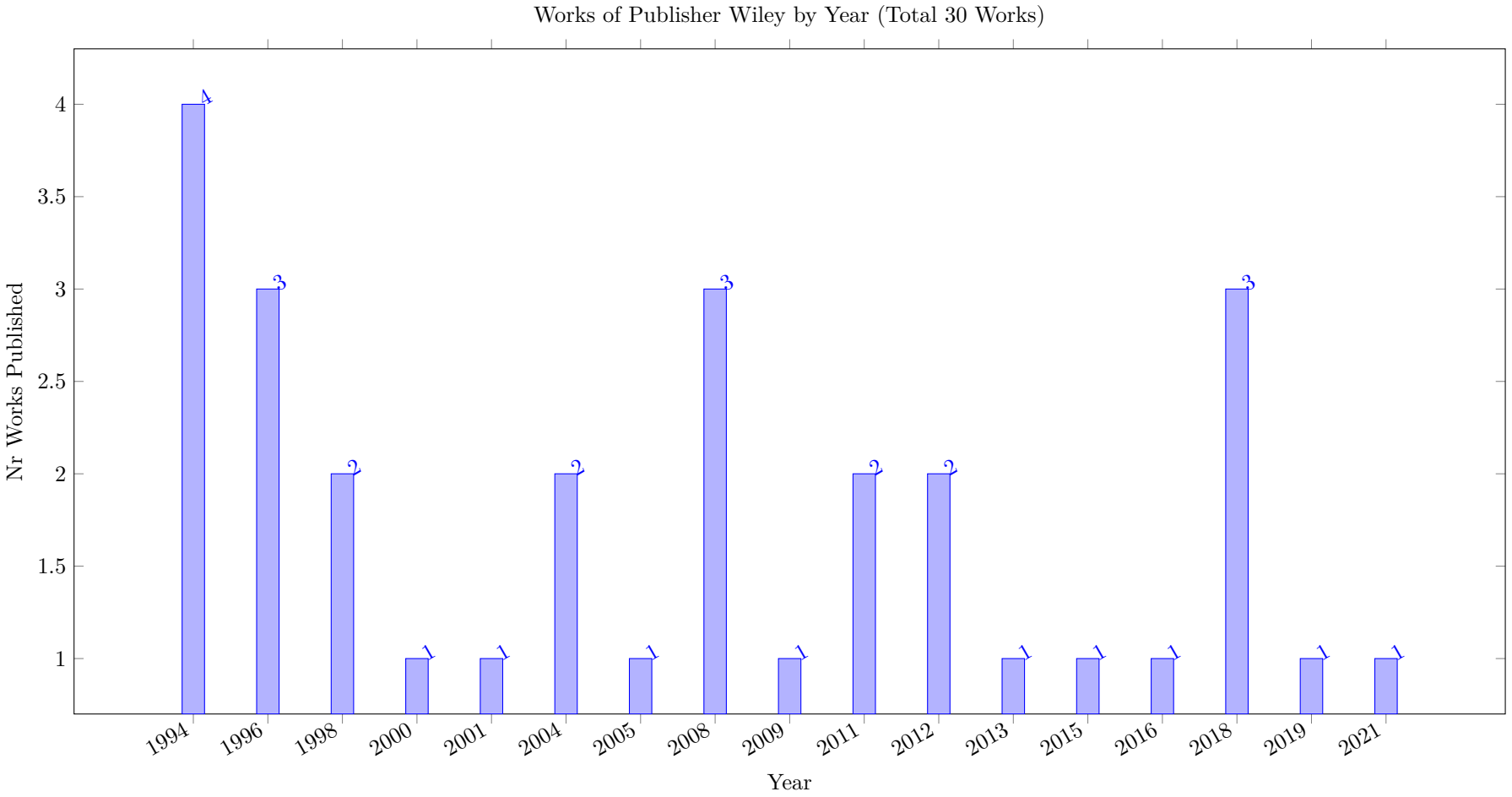
2
3
4
5
6
1992
2002
2006
2011
2018
2019
2020
2021
2022
2023


Works of Publisher Wiley by Year (Total 30 Works)
Nr Works Published
Year
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1.5
2
2.5
3
3.5
4
1994
1996
1998
2000
2001
2004
2005
2008
2009
2011
2012
2013
2015
2016
2018
2019
2021
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2
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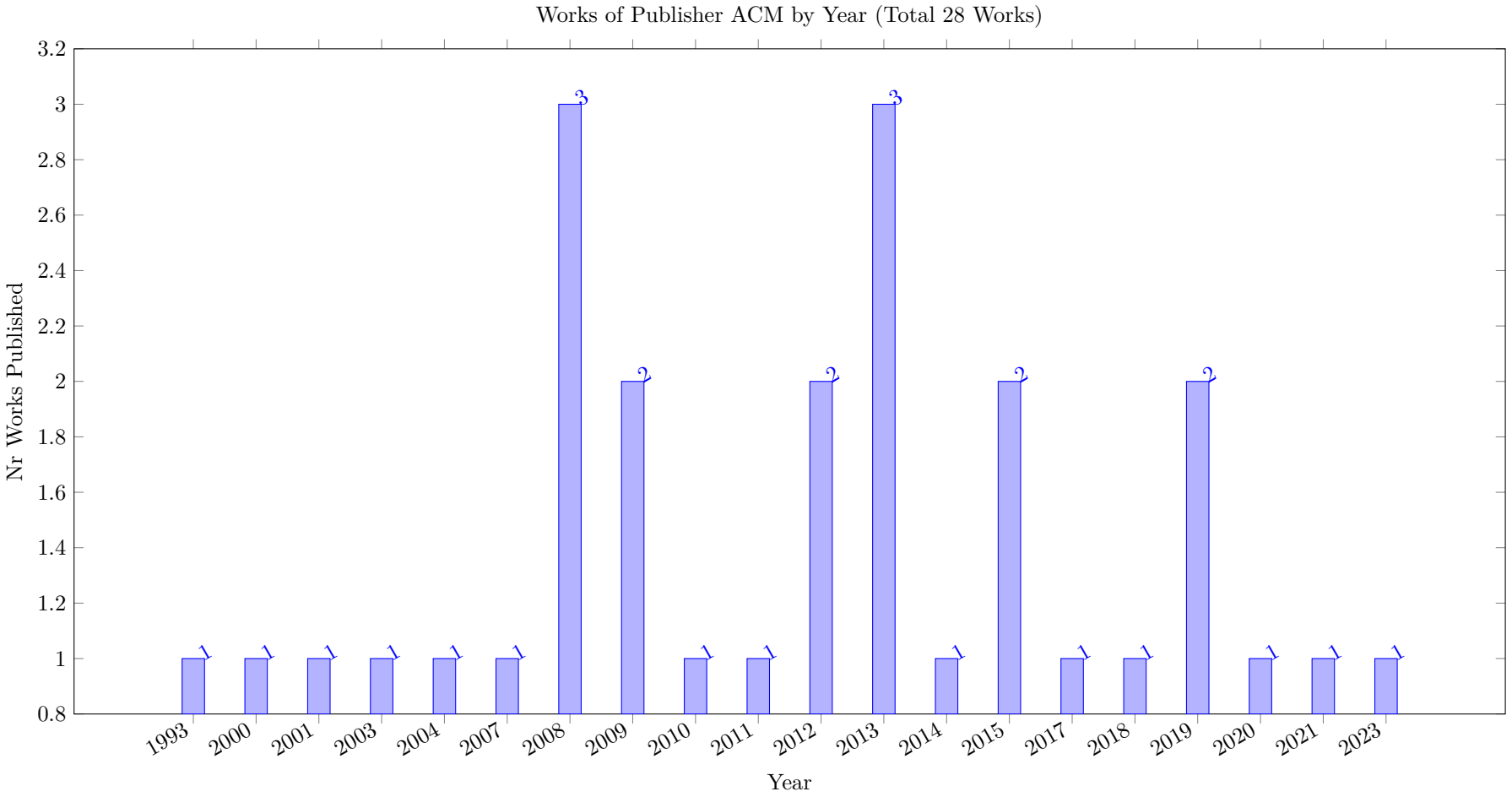
1
3
1
1


Works of Publisher ACM by Year (Total 28 Works)
Nr Works Published
Year
3.2
3
2.8
2.6
2.4
2.2
2
1.8
1.6
1.4
1.2
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0.8
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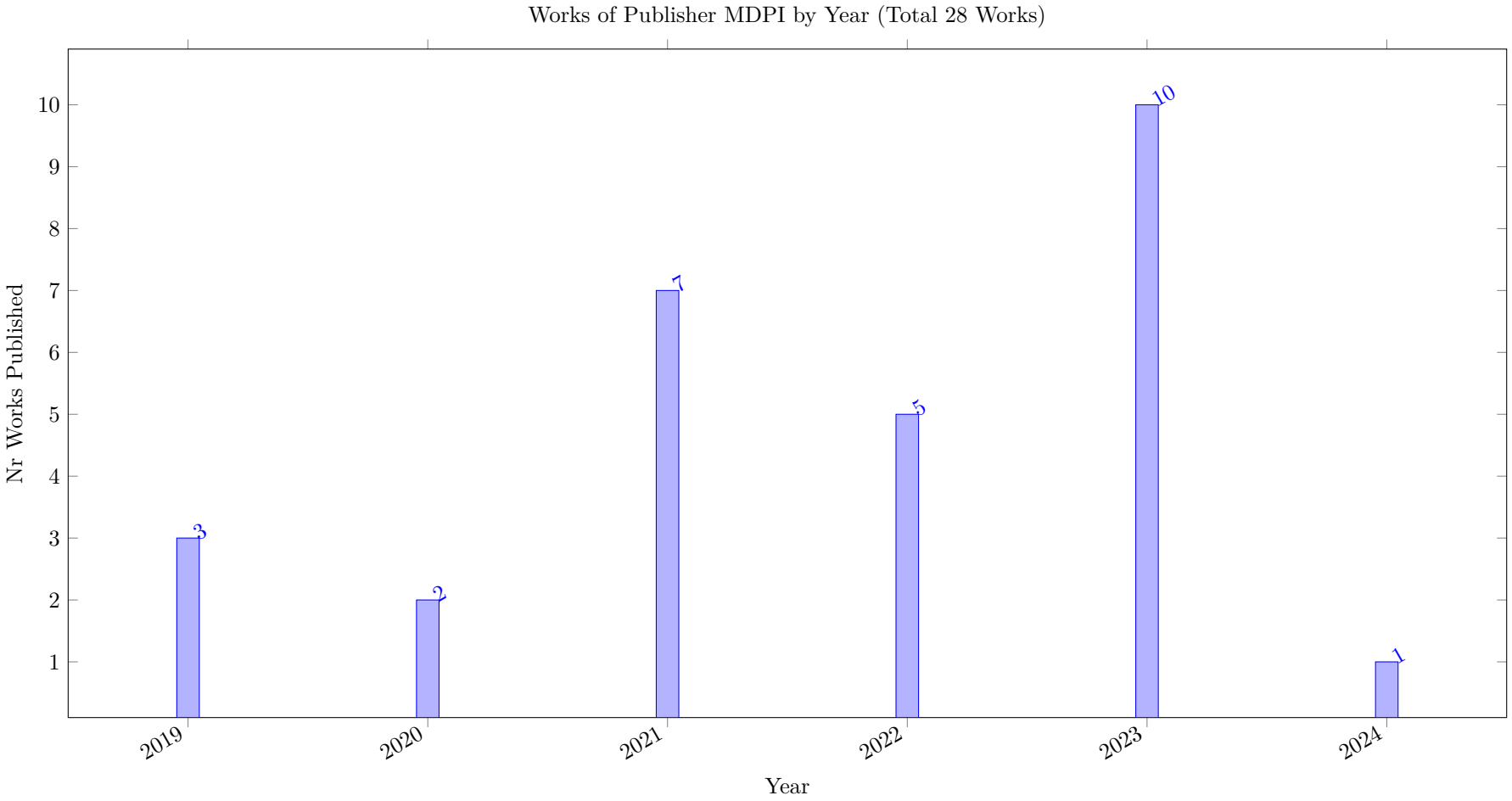
2015
2017
2018
2019
2020
2021
2023


Works of Publisher MDPI by Year (Total 28 Works)
Nr Works Published
Year
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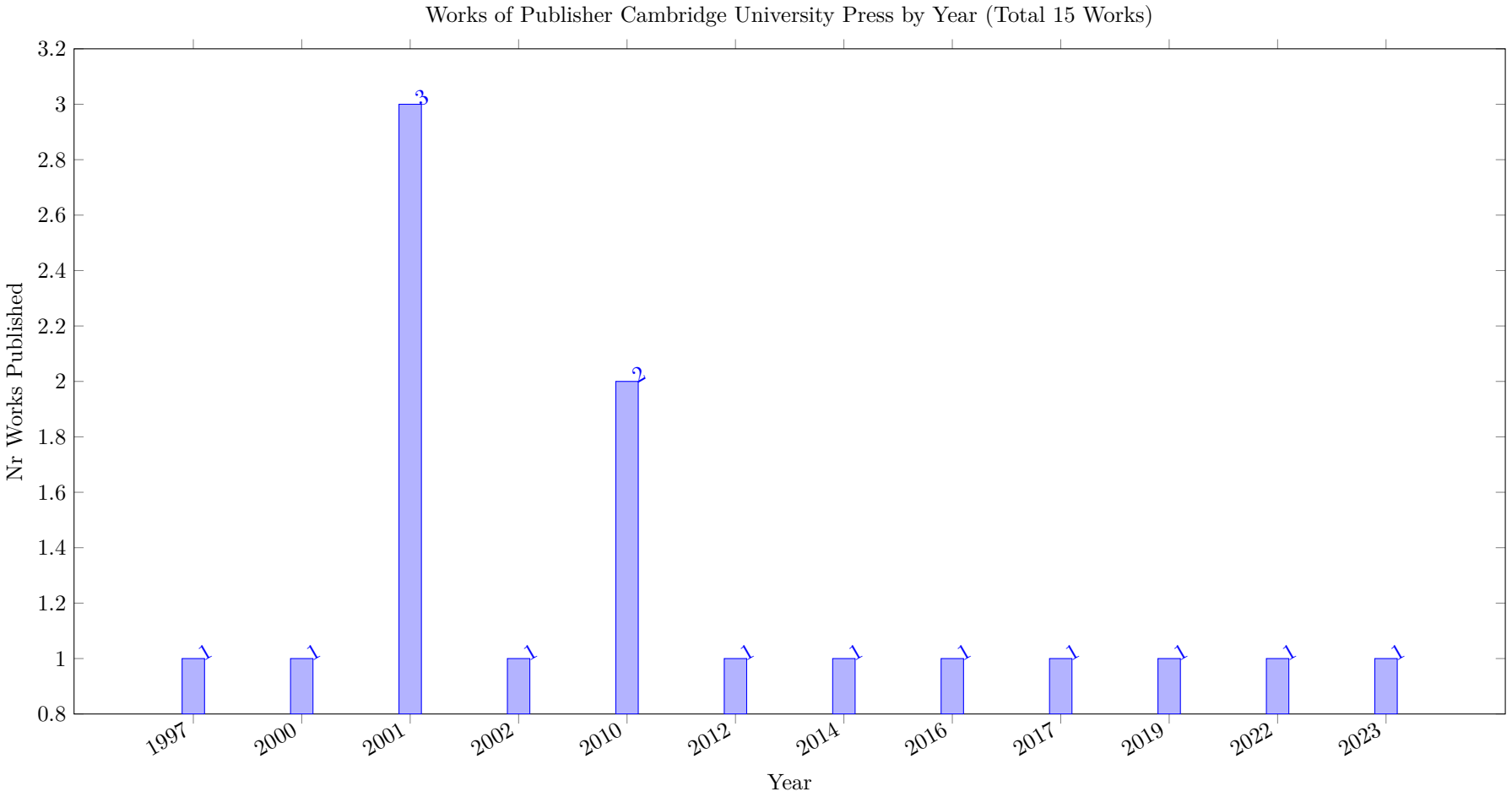
2
3
4
5
6
7
8
9
10
2019
2020
2021
2022
2023
2024
3
2
7
5
10
1


Works of Publisher Cambridge University Press by Year (Total 15 Works)
Nr Works Published
Year
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3
2.8
2.6
2.4
2.2
2
1.8
1.6
1.4
1.2
1
0.8
1997
2000
2001
2002
2010
2012
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2017
2019
2022
2023
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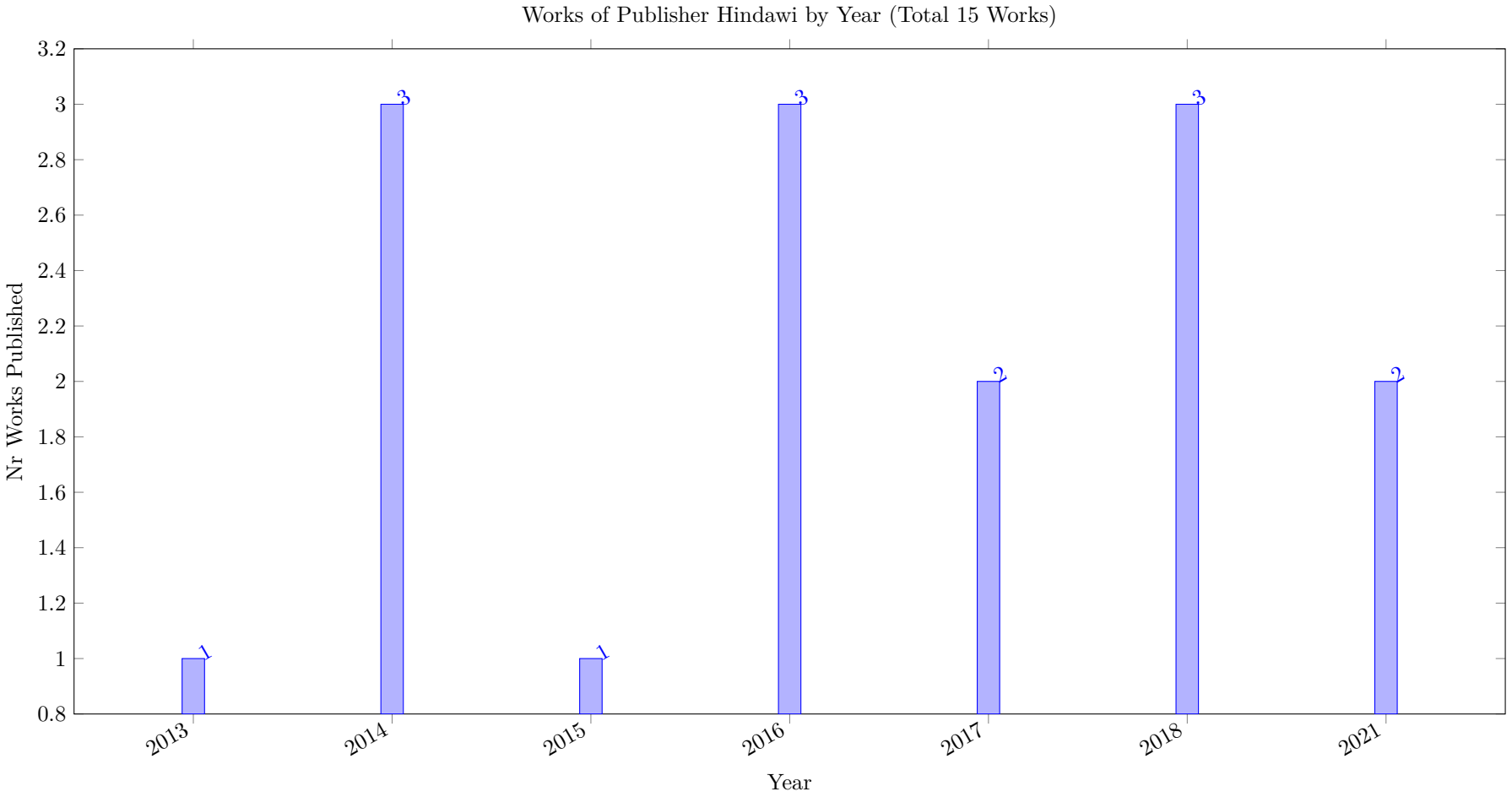
Works of Publisher Hindawi by Year (Total 15 Works)
Nr Works Published
Year
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2.8
2.6
2.4
2.2
2
1.8
1.6
1.4
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0.8
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2015
2016
2017
2018
2021
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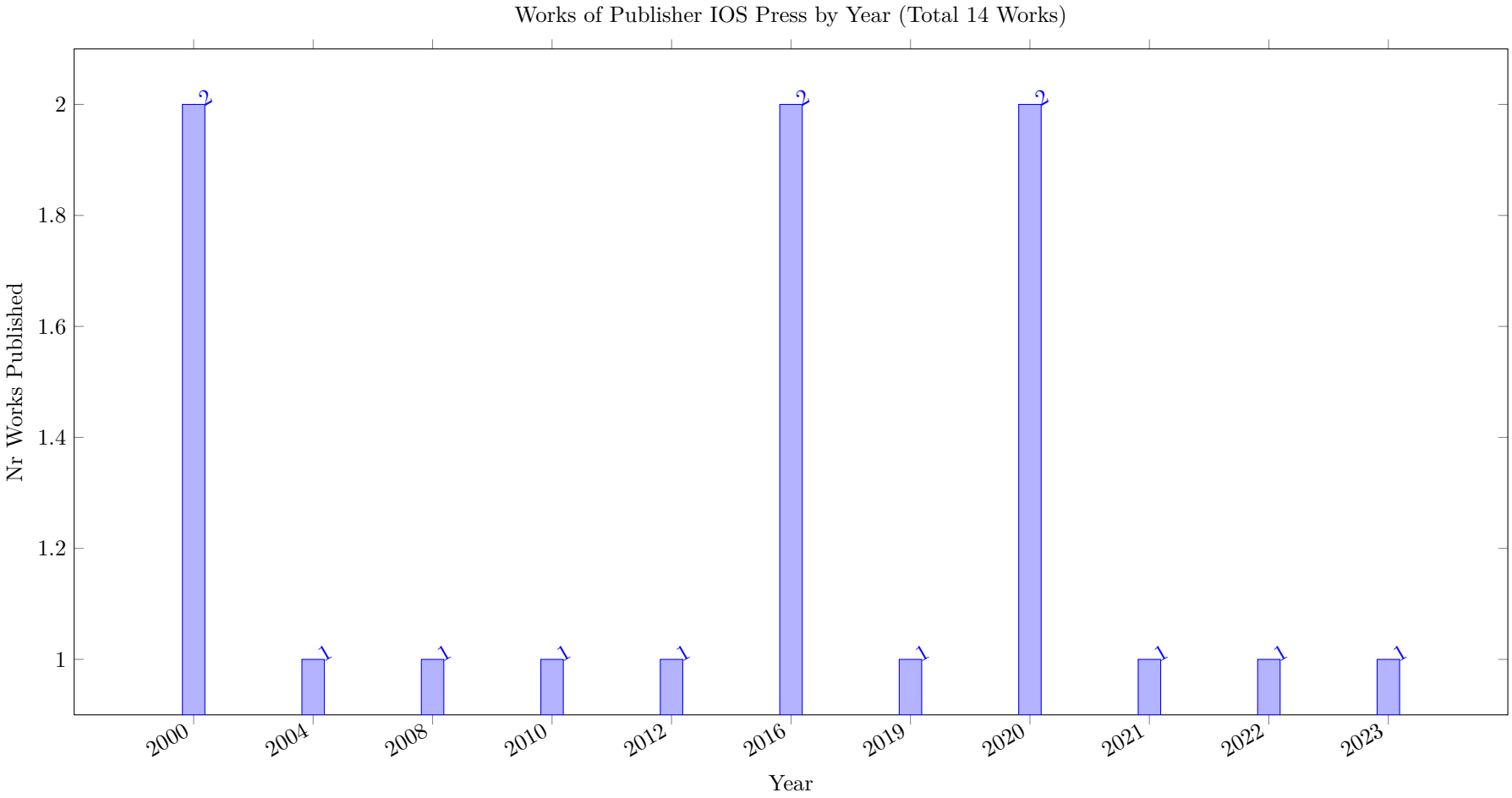
2
3
2


Works of Publisher IOS Press by Year (Total 14 Works)
Nr Works Published
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1.6
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1.2
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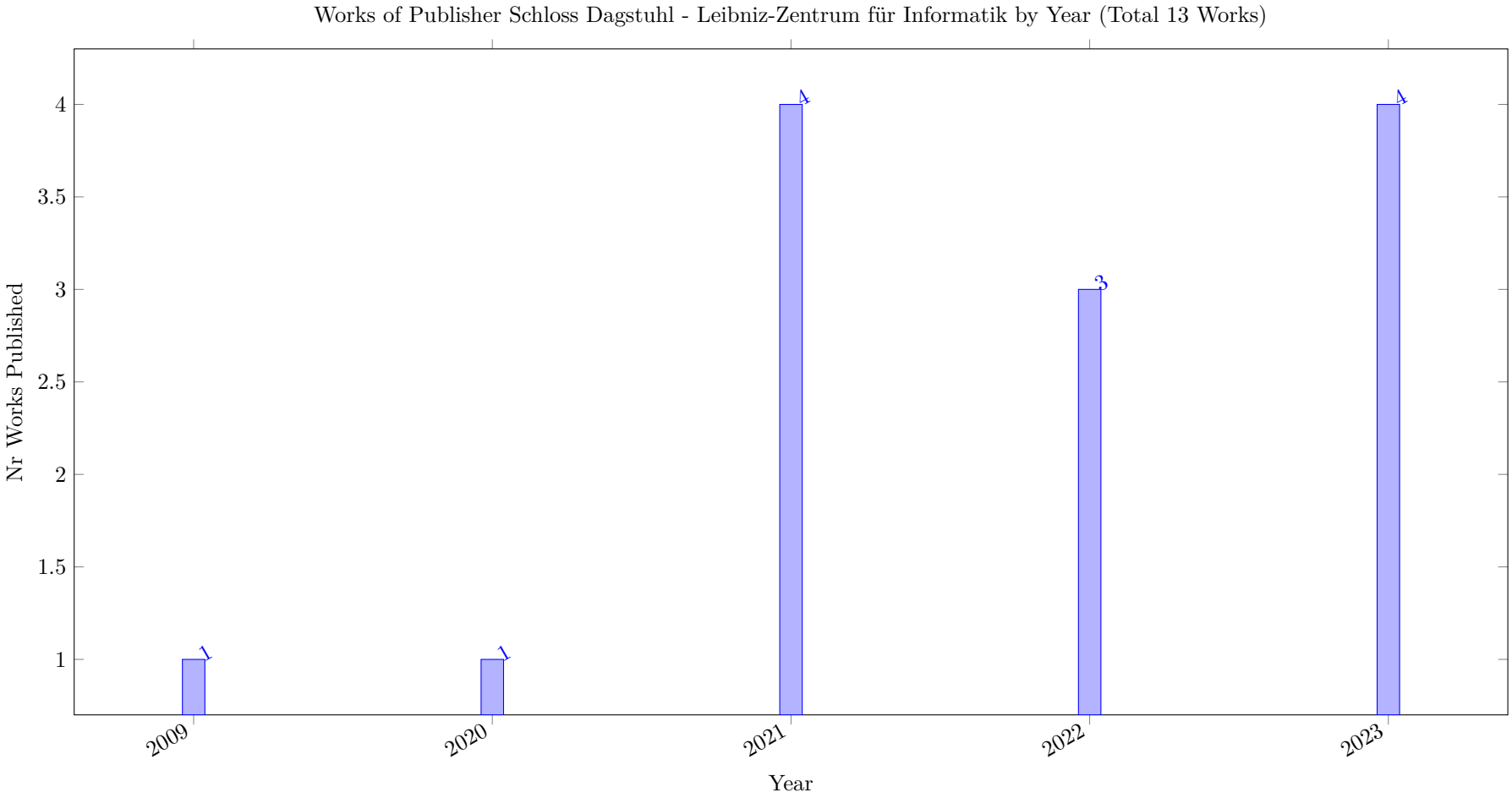
2016
2019
2020
2021
2022
2023
Year


Works of Publisher Schloss Dagstuhl - Leibniz-Zentrum für Informatik by Year (Total 13 Works)
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2
1.5
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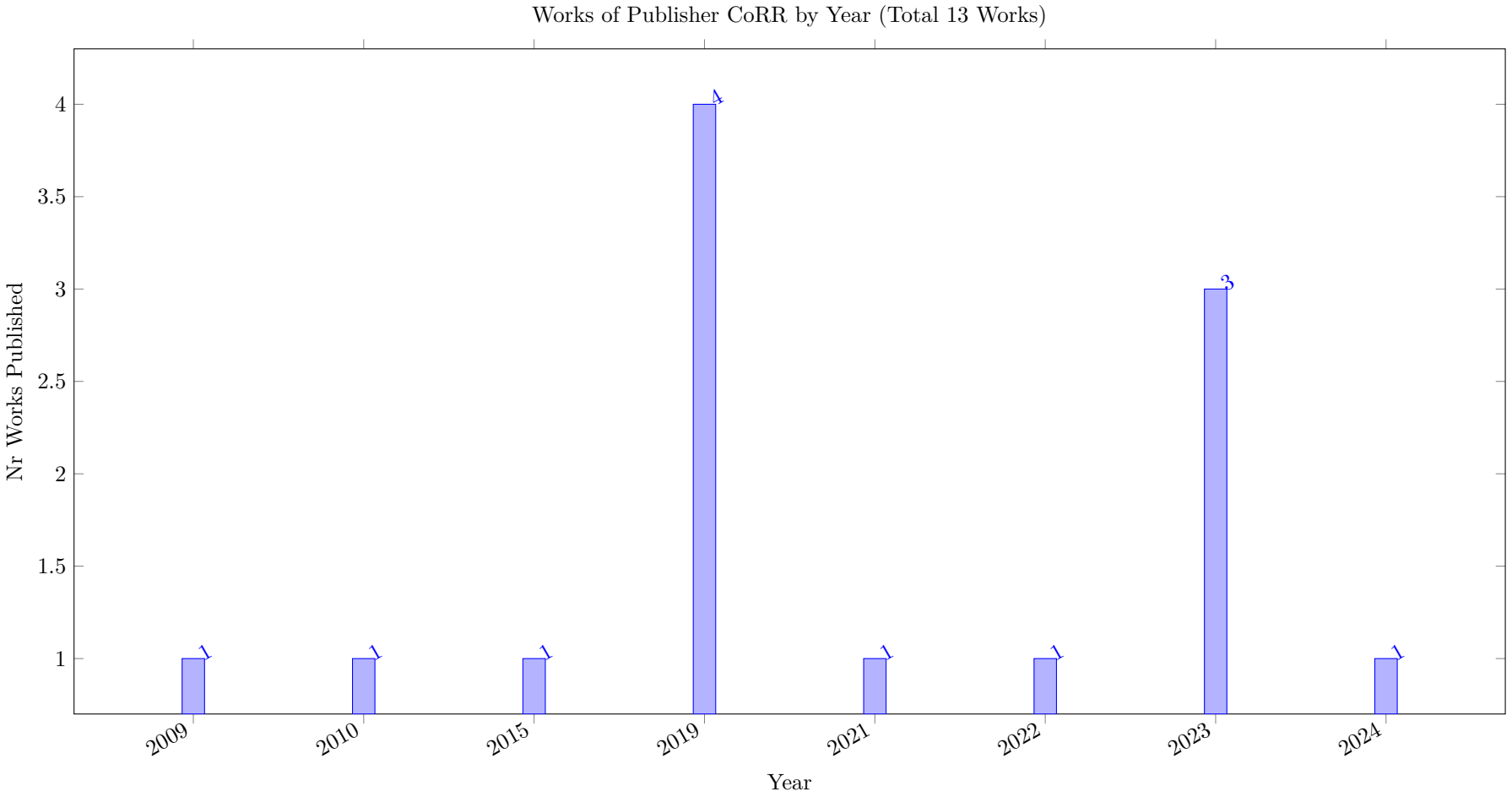
1
1
4
3
4
2009
2020
2021
2022
2023
Year


Works of Publisher CoRR by Year (Total 13 Works)
Nr Works Published
Year
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3.5
3
2.5
2
1.5
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2009
2010
2015
2019
2021
2022
2023
2024
1
1
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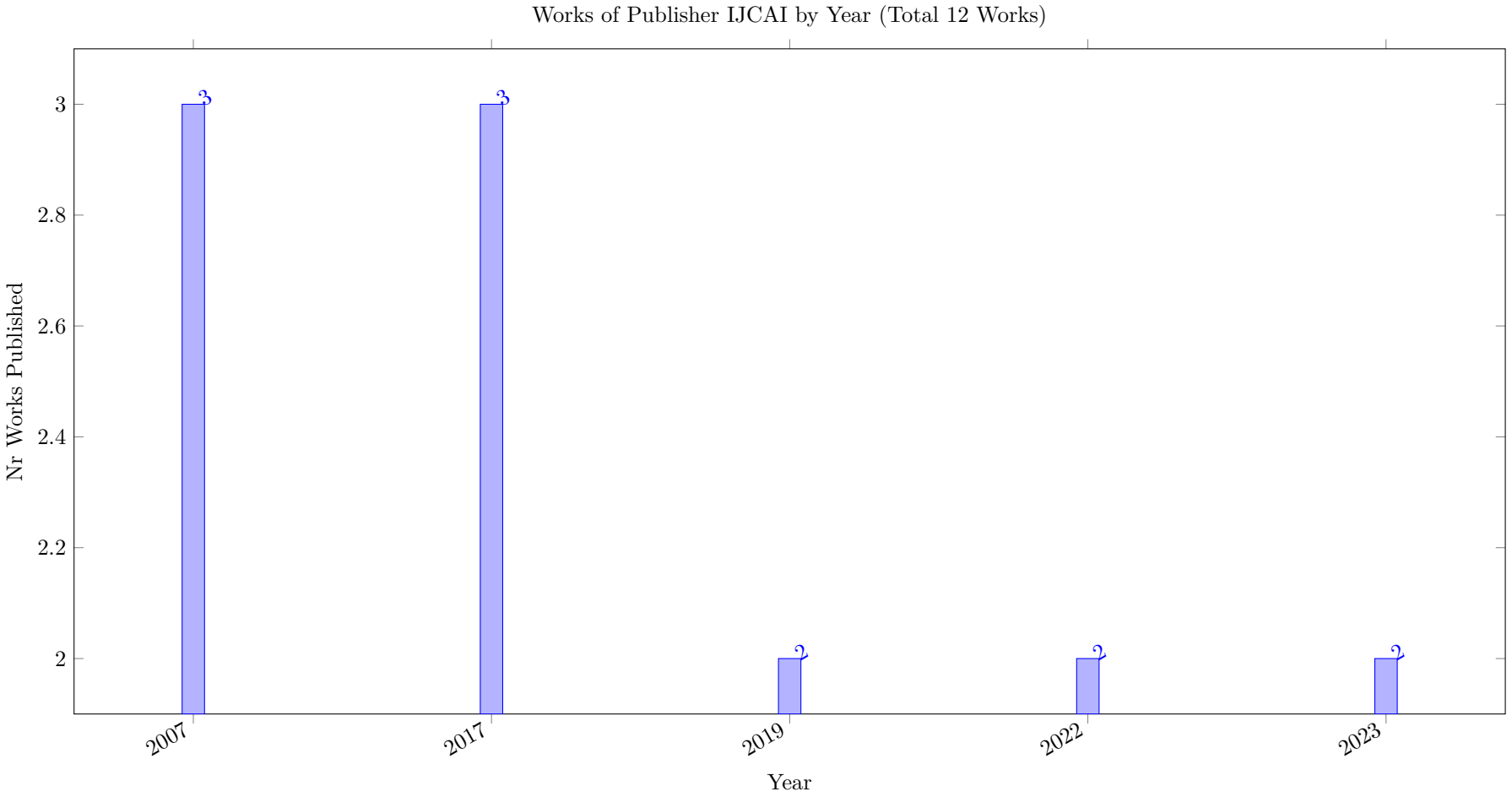
4
1
1
3
1


Works of Publisher IJCAI by Year (Total 12 Works)
Nr Works Published
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2.4
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2
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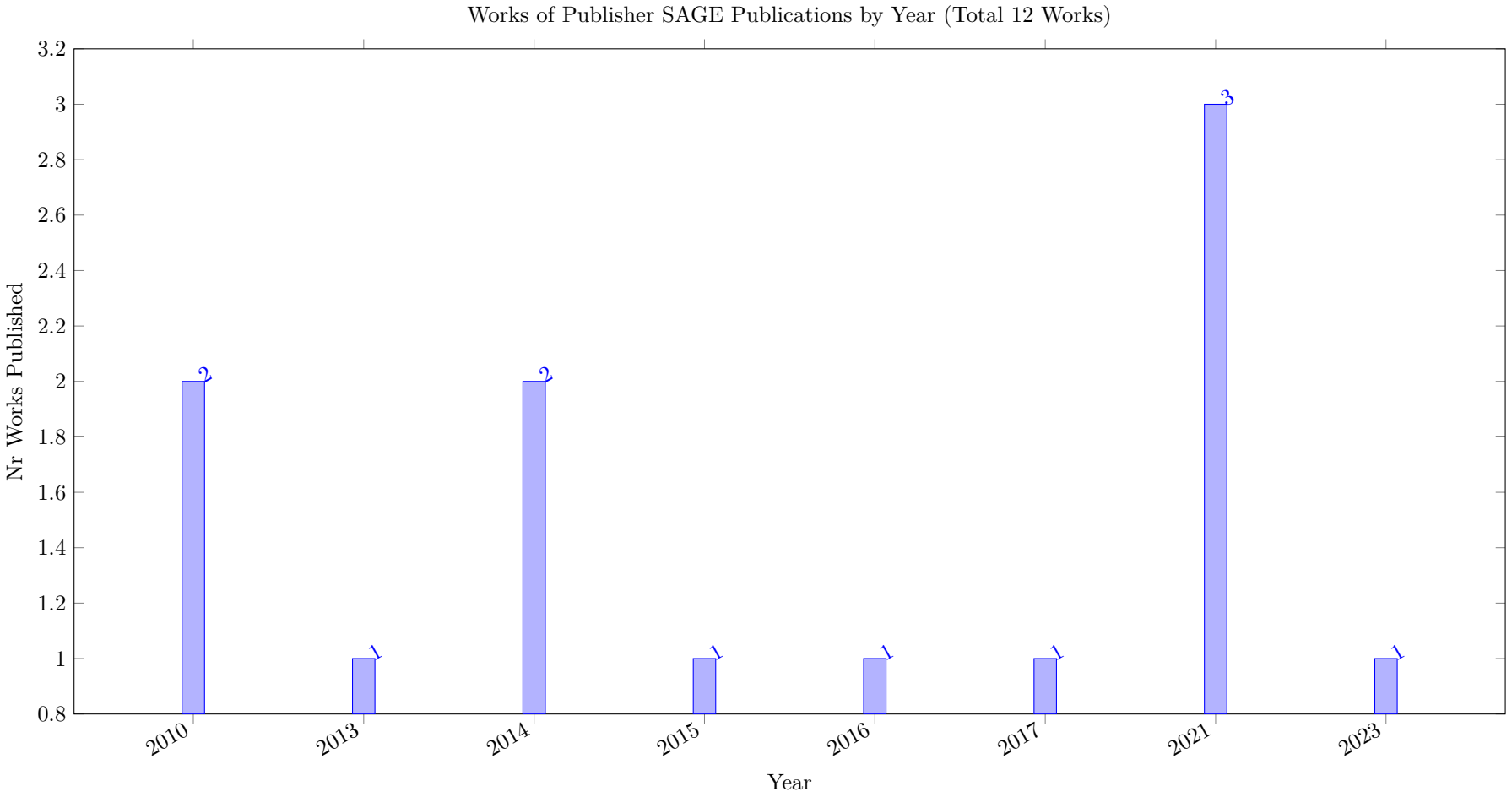
2017
2019
2022
2023
Year


Works of Publisher SAGE Publications by Year (Total 12 Works)
Nr Works Published
Year
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2.8
2.6
2.4
2.2
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1.8
1.6
1.4
1.2
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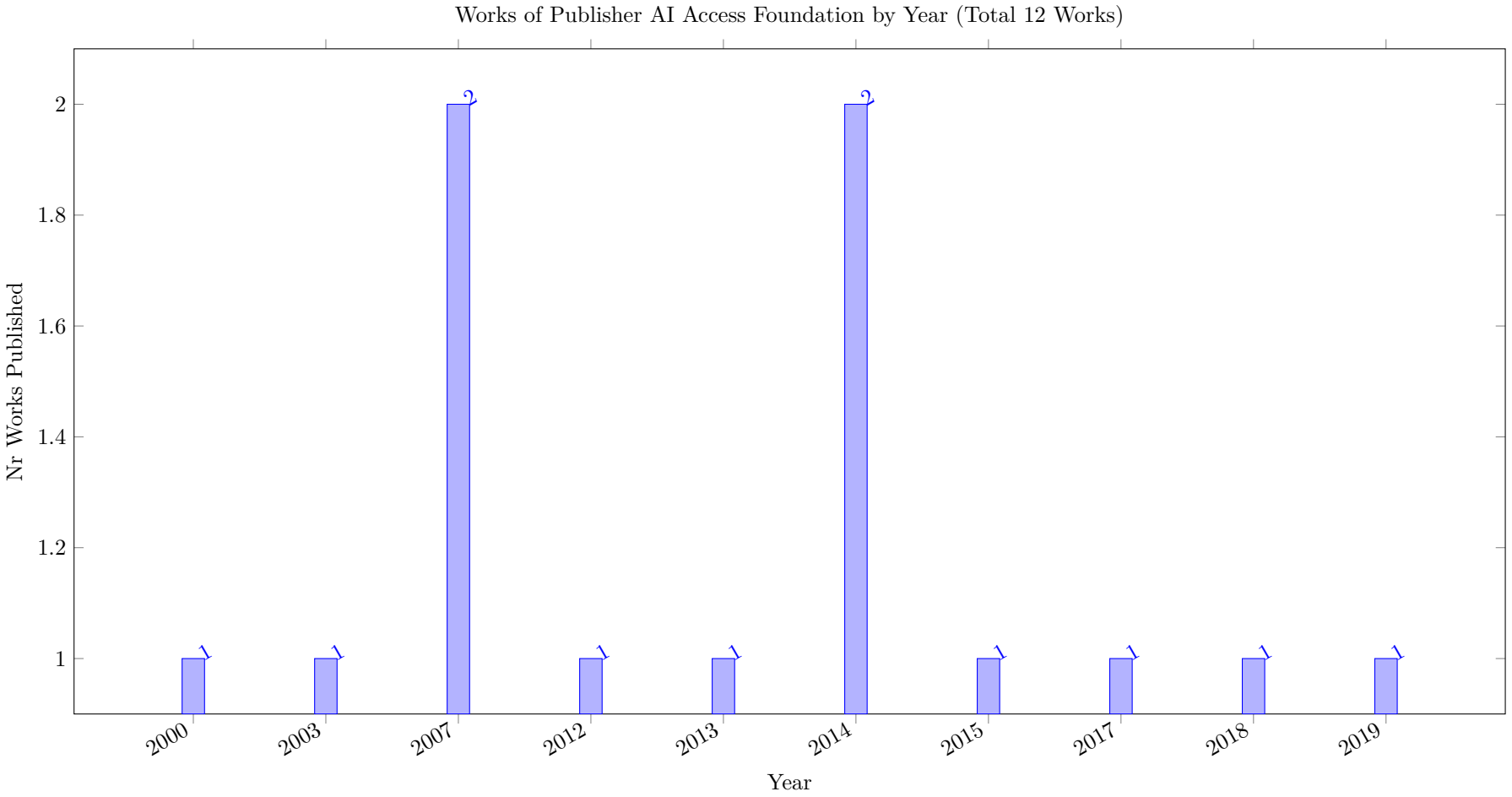
2021
2023


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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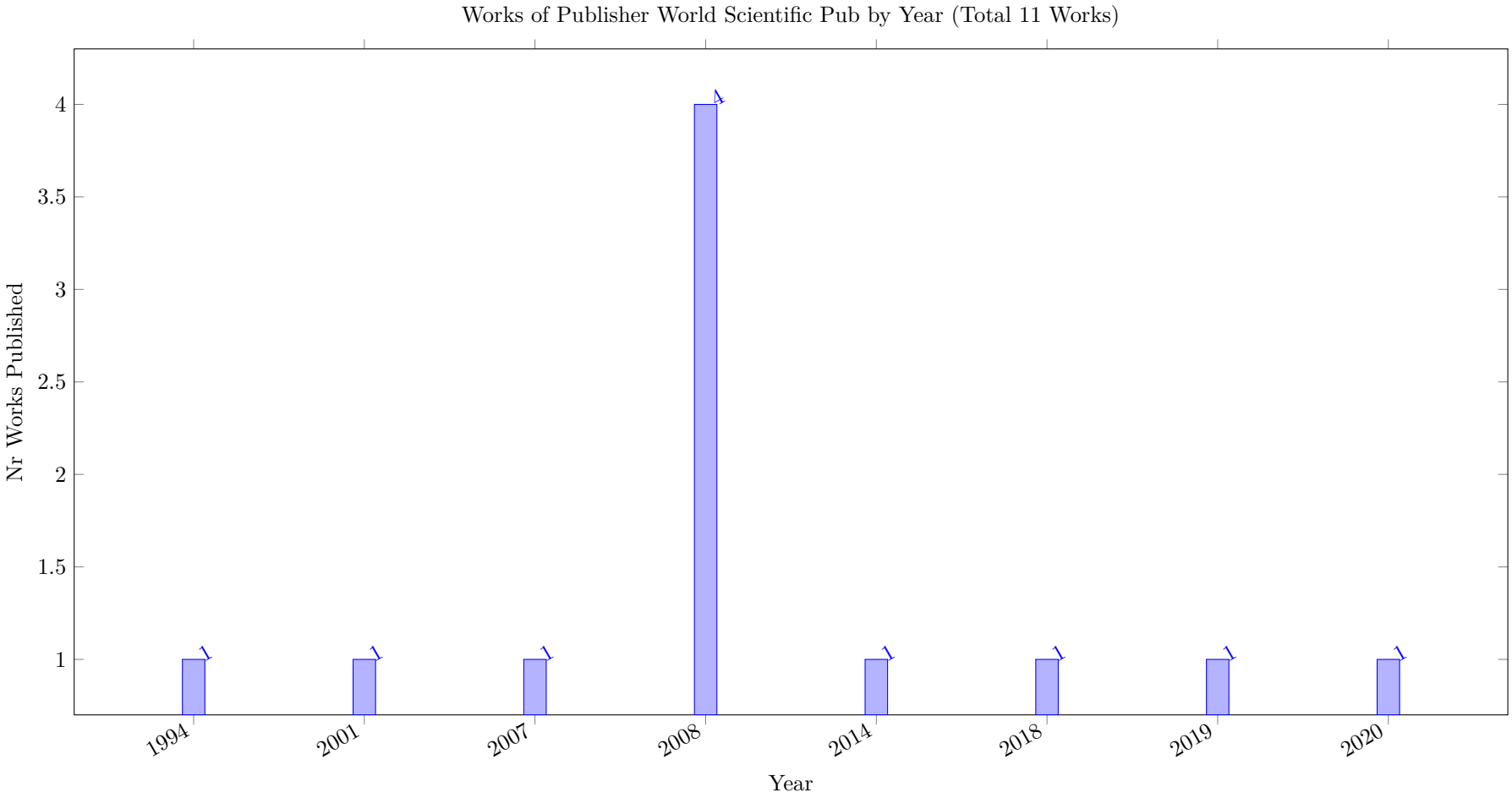
2012
2013
2014
2015
2017
2018
2019
Year


Works of Publisher World Scientific Pub by Year (Total 11 Works)
Nr Works Published
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3.5
3
2.5
2
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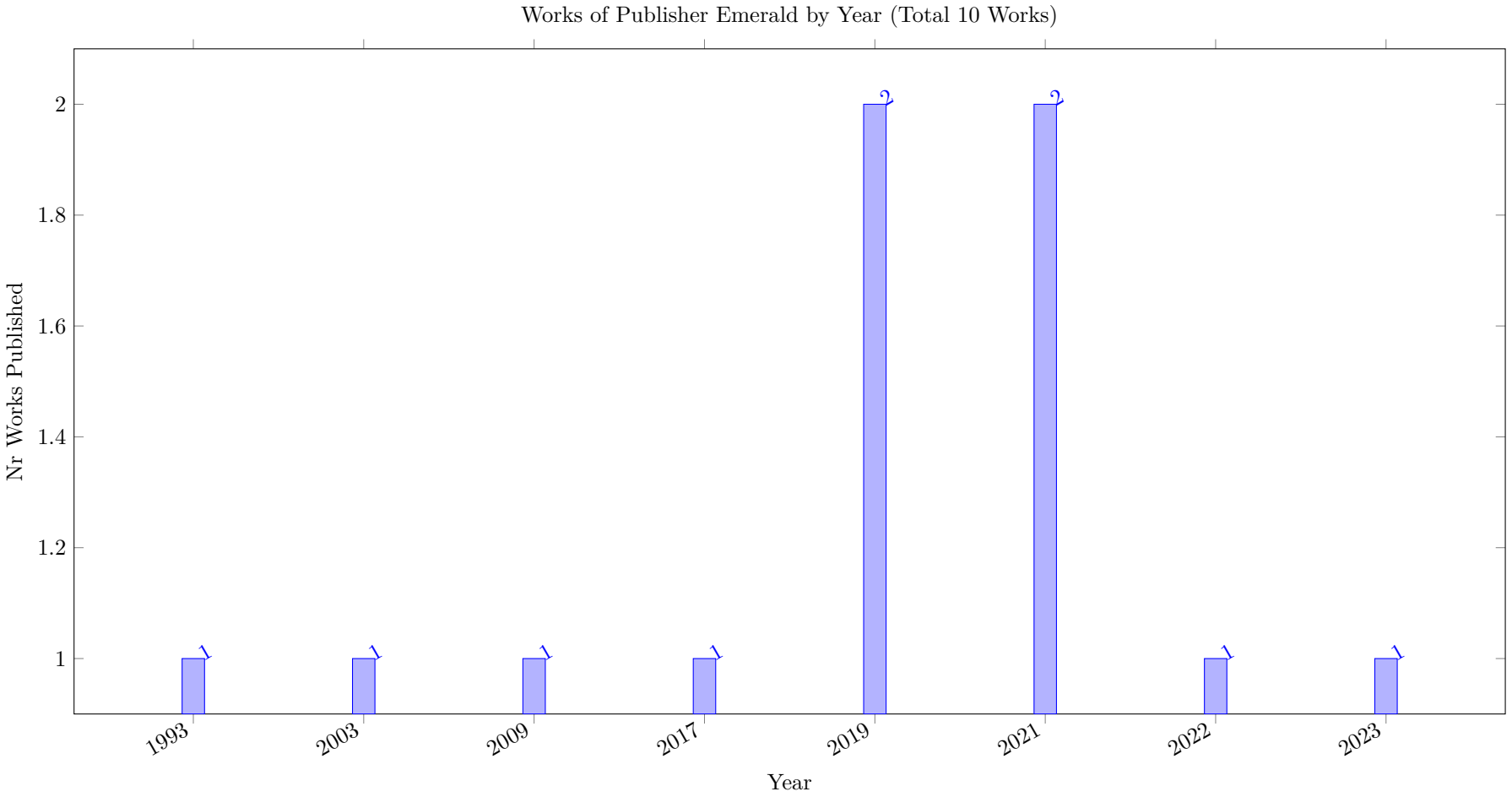
2001
2007
2008
2014
2018
2019
2020
Year


Works of Publisher Emerald by Year (Total 10 Works)
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1.6
1.4
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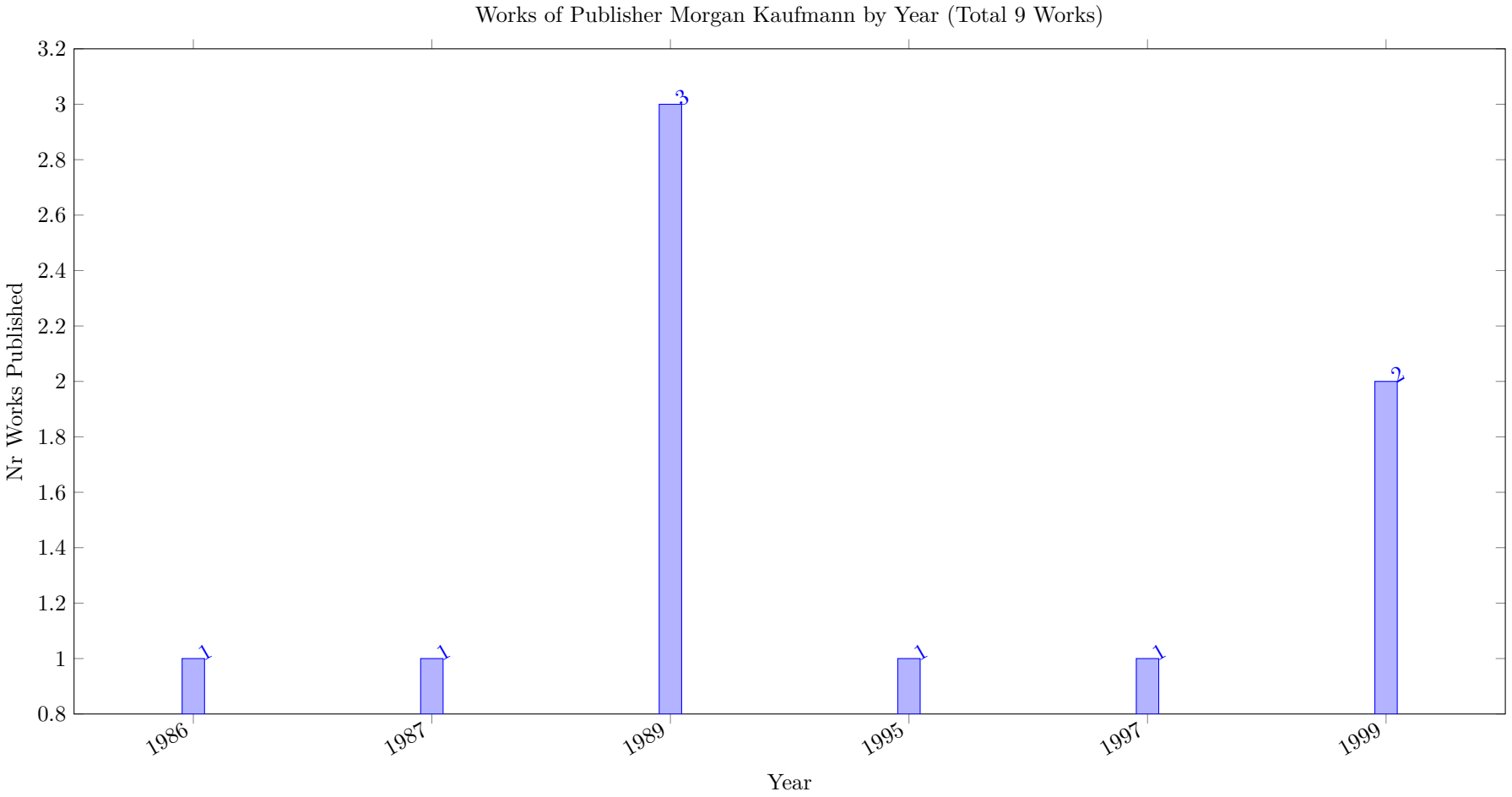
2009
2017
2019
2021
2022
2023
Year


Works of Publisher Morgan Kaufmann by Year (Total 9 Works)
Nr Works Published
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2.8
2.6
2.4
2.2
2
1.8
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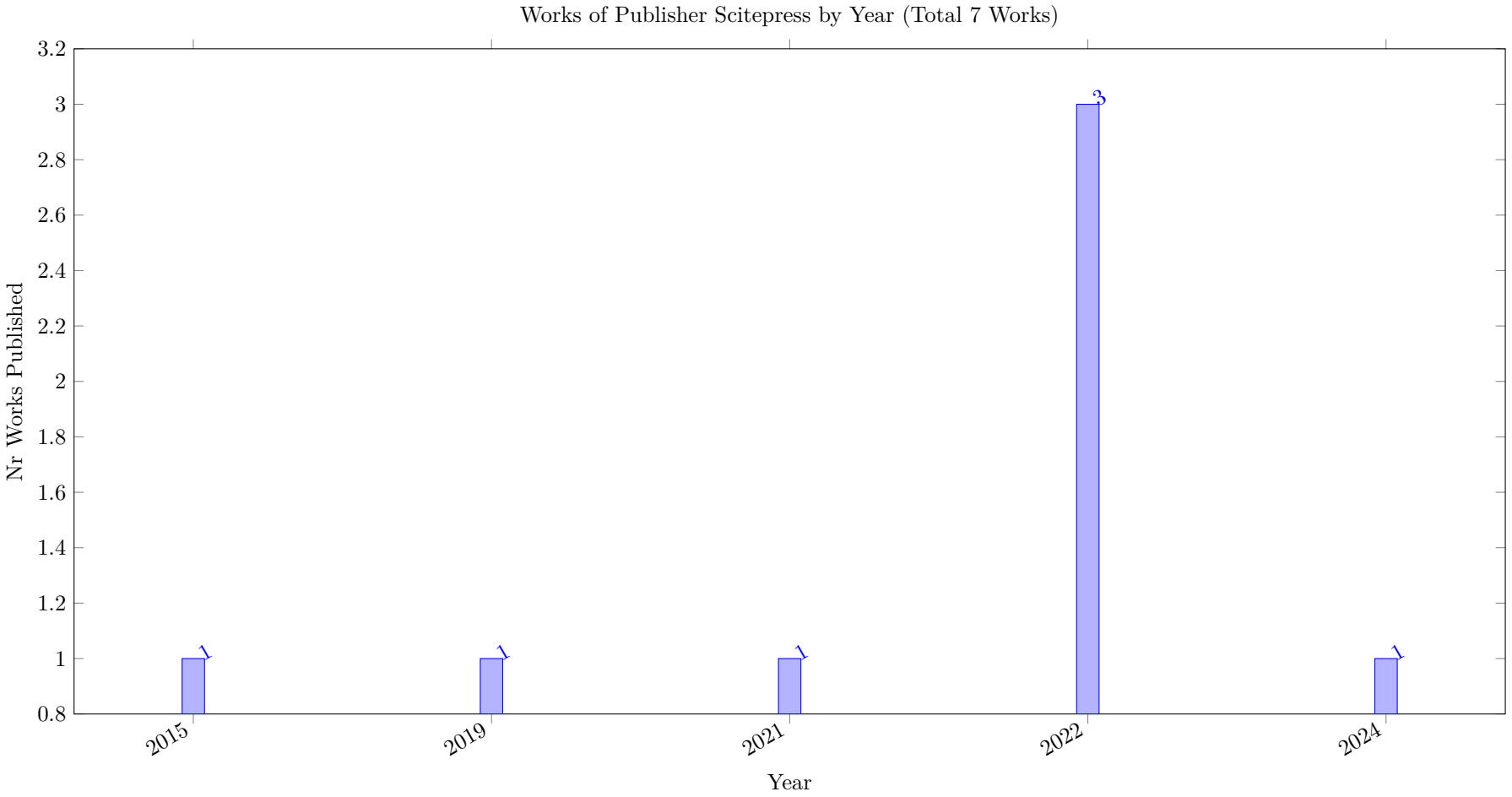
2
1986
1987
1989
1995
1997
1999
Year


Works of Publisher Scitepress by Year (Total 7 Works)
Nr Works Published
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2.8
2.6
2.4
2.2
2
1.8
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2015
2019
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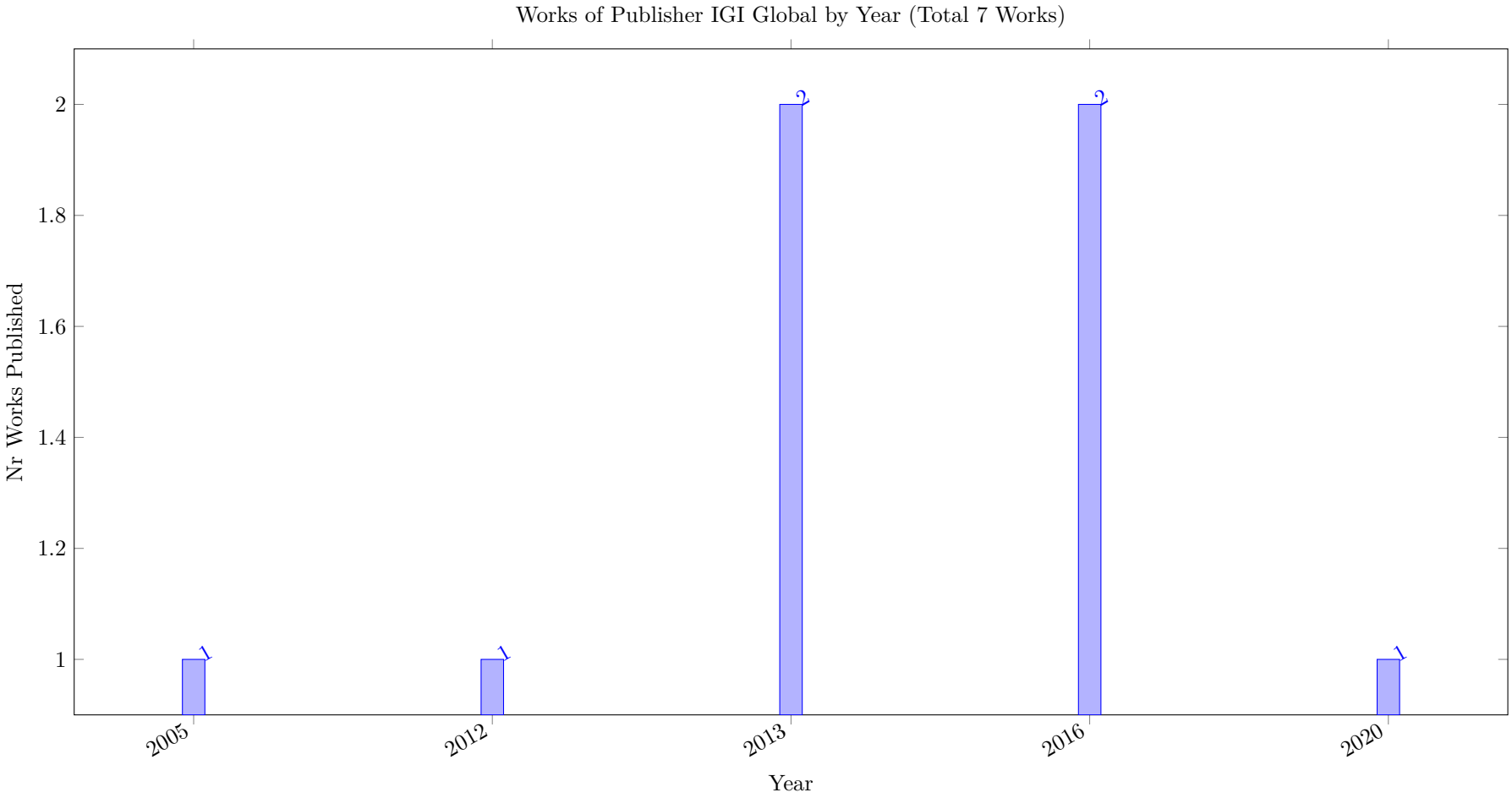
2022
2024
Year


Works of Publisher IGI Global by Year (Total 7 Works)
Nr Works Published
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1.4
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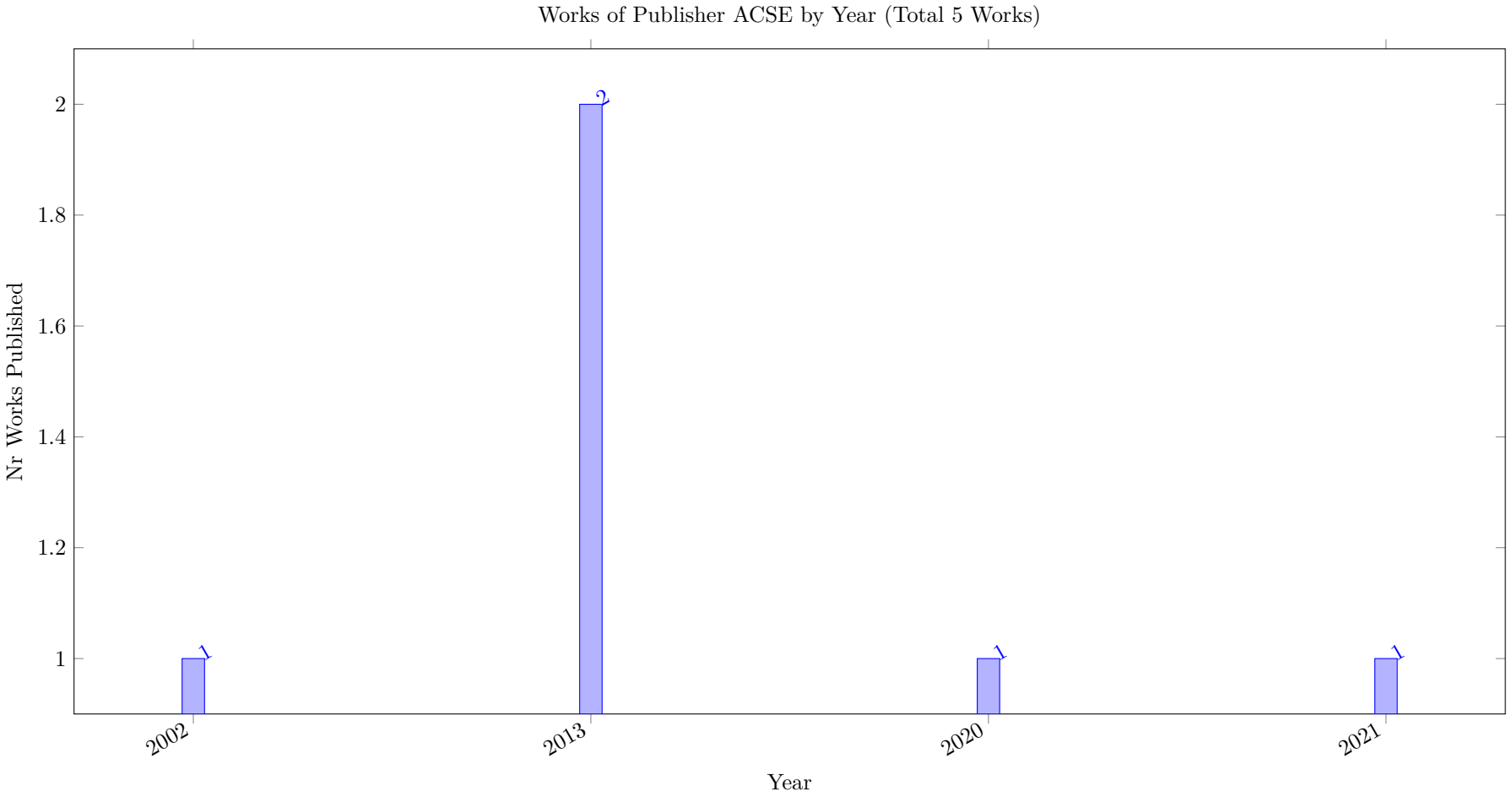
2
2
1
2005
2012
2013
2016
2020
Year


Works of Publisher ACSE by Year (Total 5 Works)
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1.4
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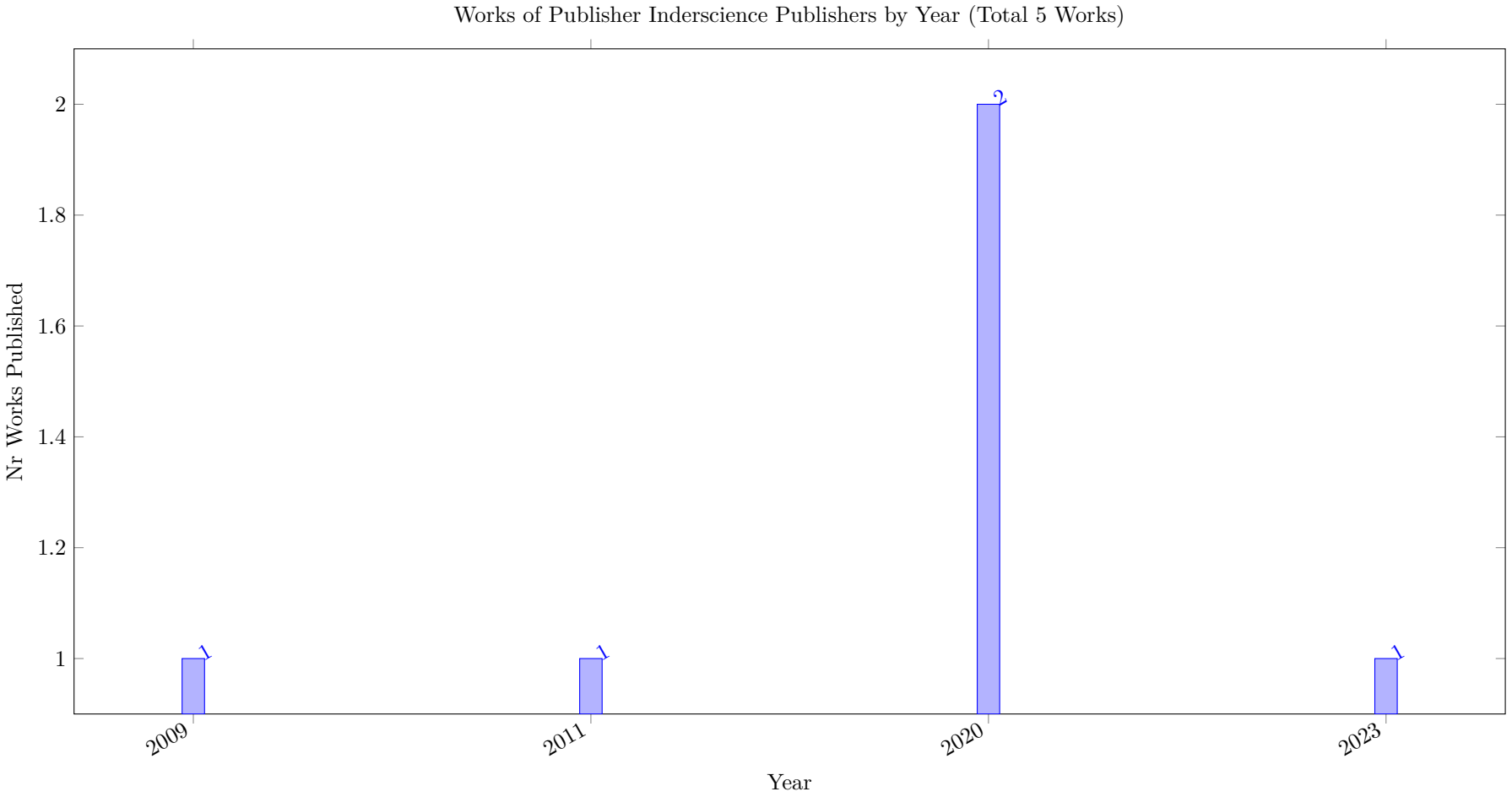
2
1
1
1
2002
2013
2020
2021
Year


Works of Publisher Inderscience Publishers by Year (Total 5 Works)
Nr Works Published
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1.6
1.4
1.2
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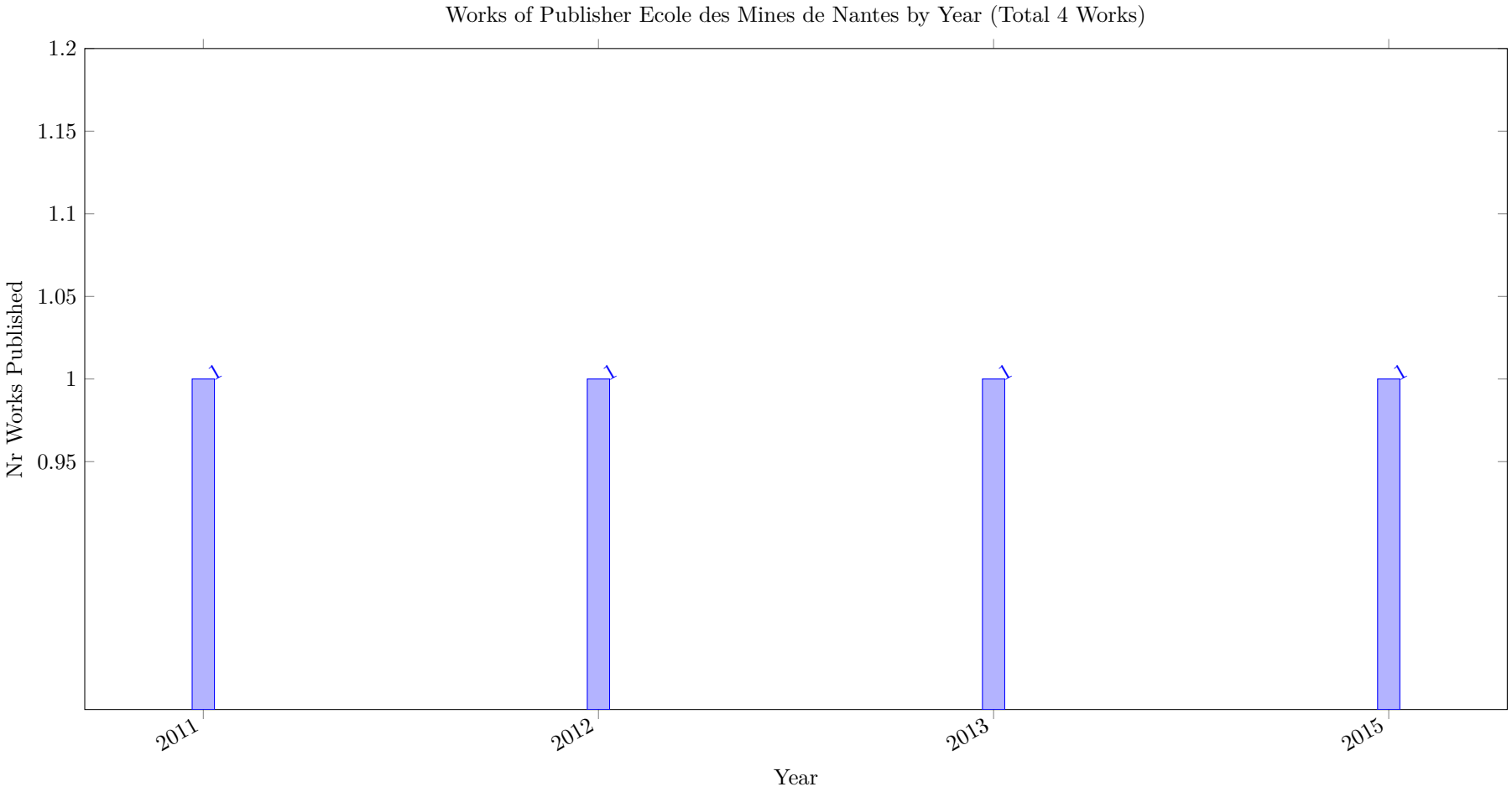
1
2
1
2009
2011
2020
2023
Year


Works of Publisher Ecole des Mines de Nantes by Year (Total 4 Works)
Nr Works Published
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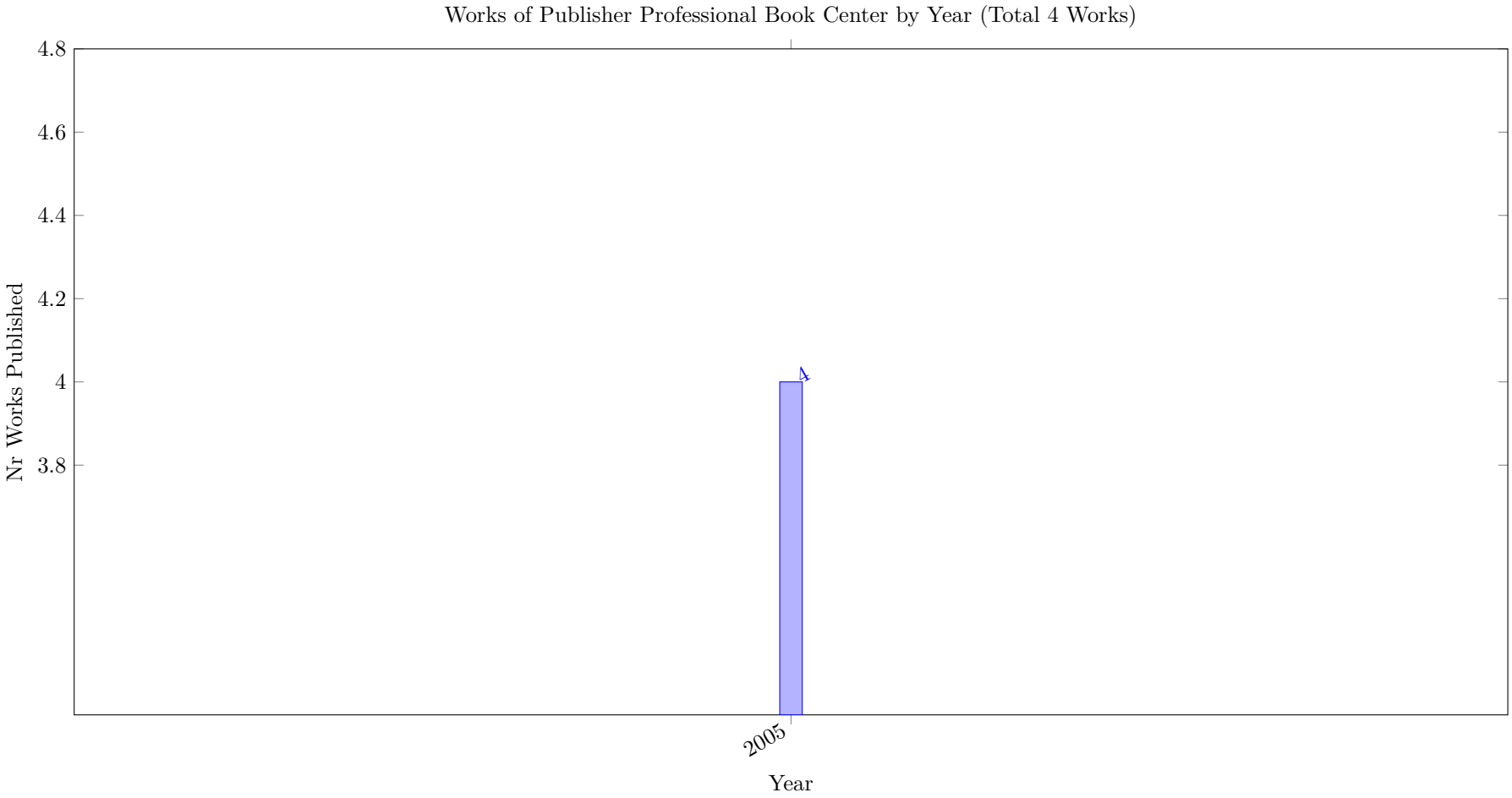
1.1
1.05
1
0.95
1
1
1
1
2011
2012
2013
2015
Year


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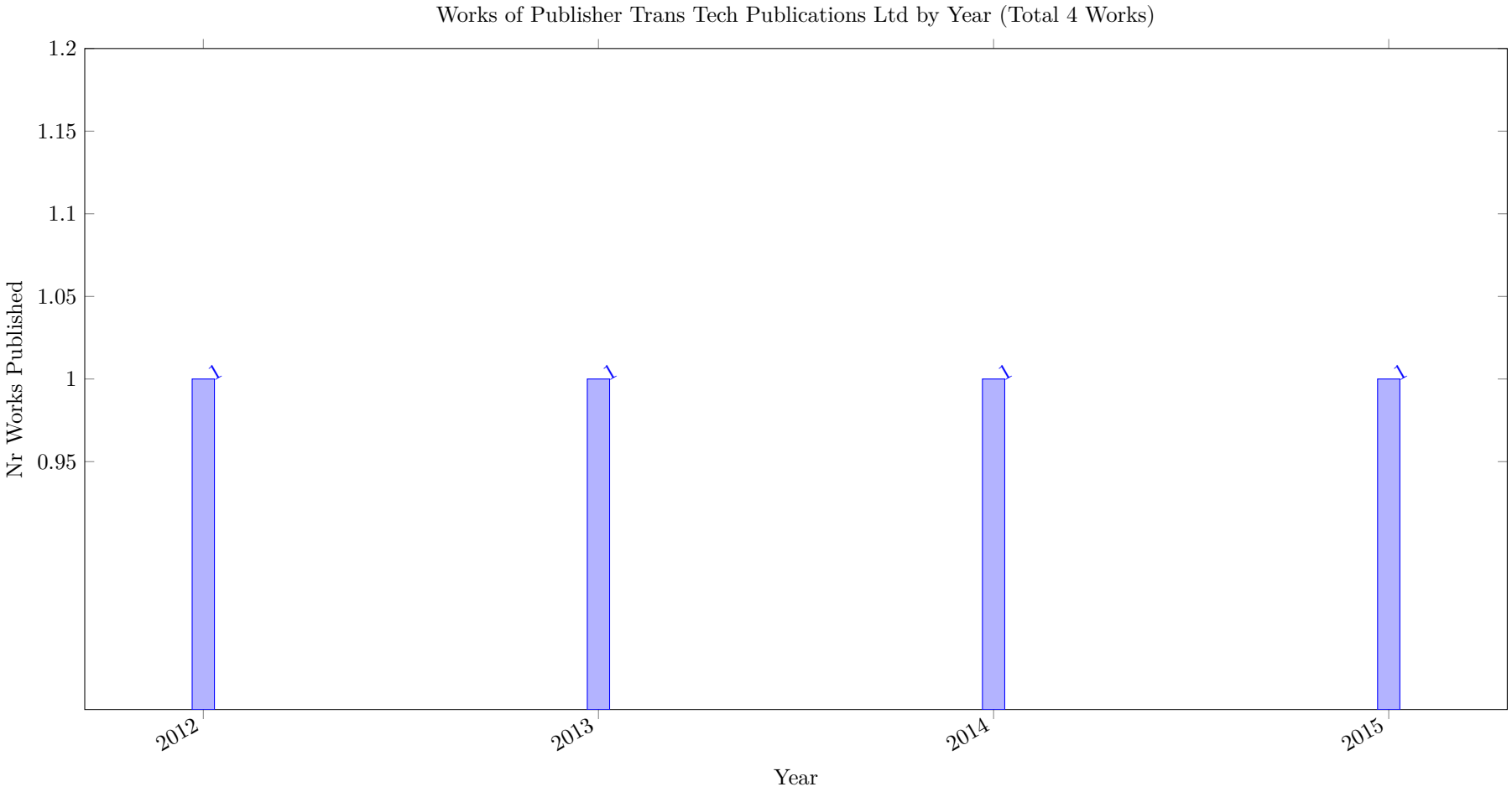
4.6
4.4
4.2
4
3.8
4
2005
Year


Works of Publisher Trans Tech Publications Ltd by Year (Total 4 Works)
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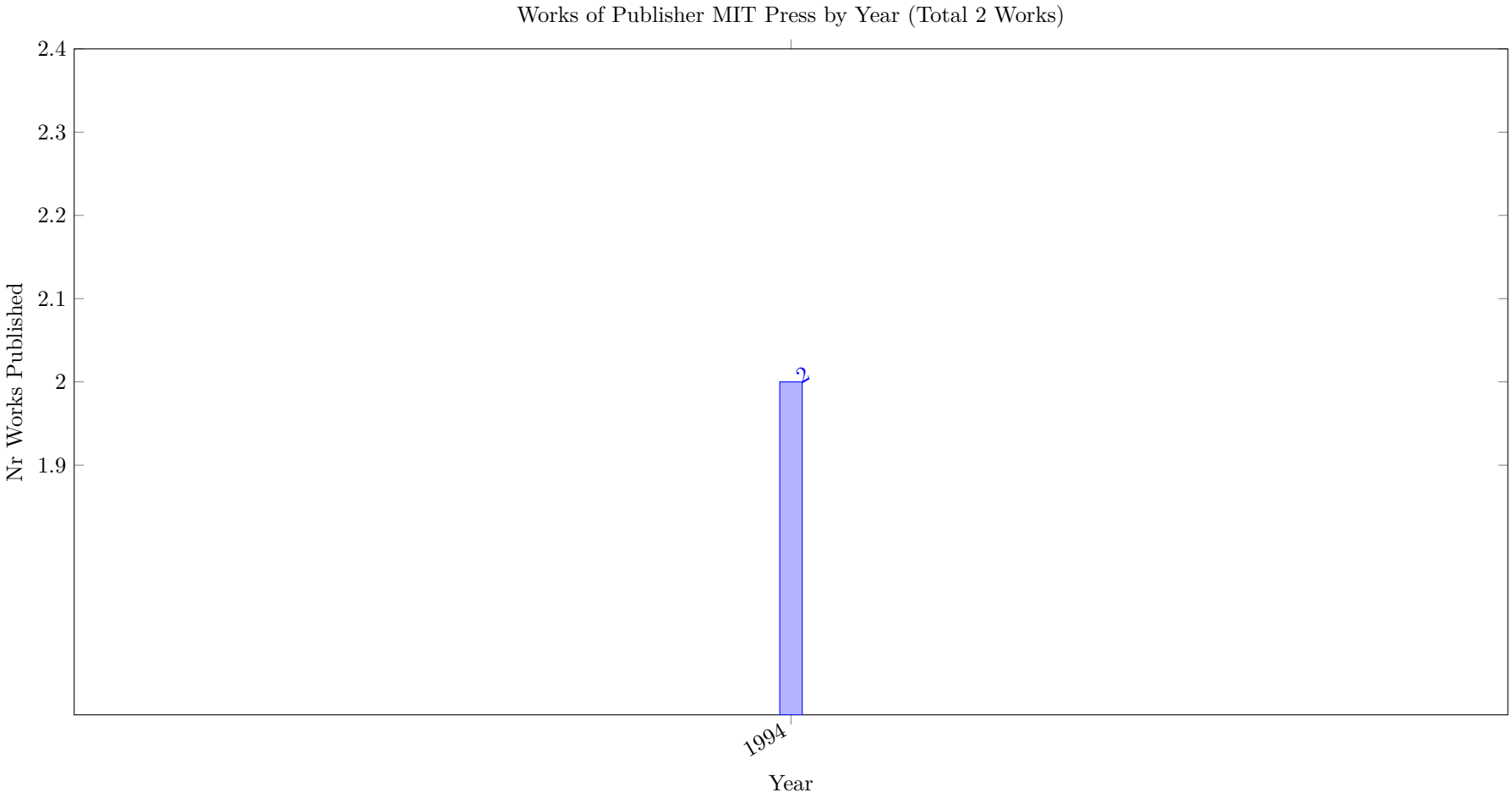
1.15
1.1
1.05
1
0.95
1
1
1
1
2012
2013
2014
2015
Year


Works of Publisher MIT Press by Year (Total 2 Works)
Nr Works Published
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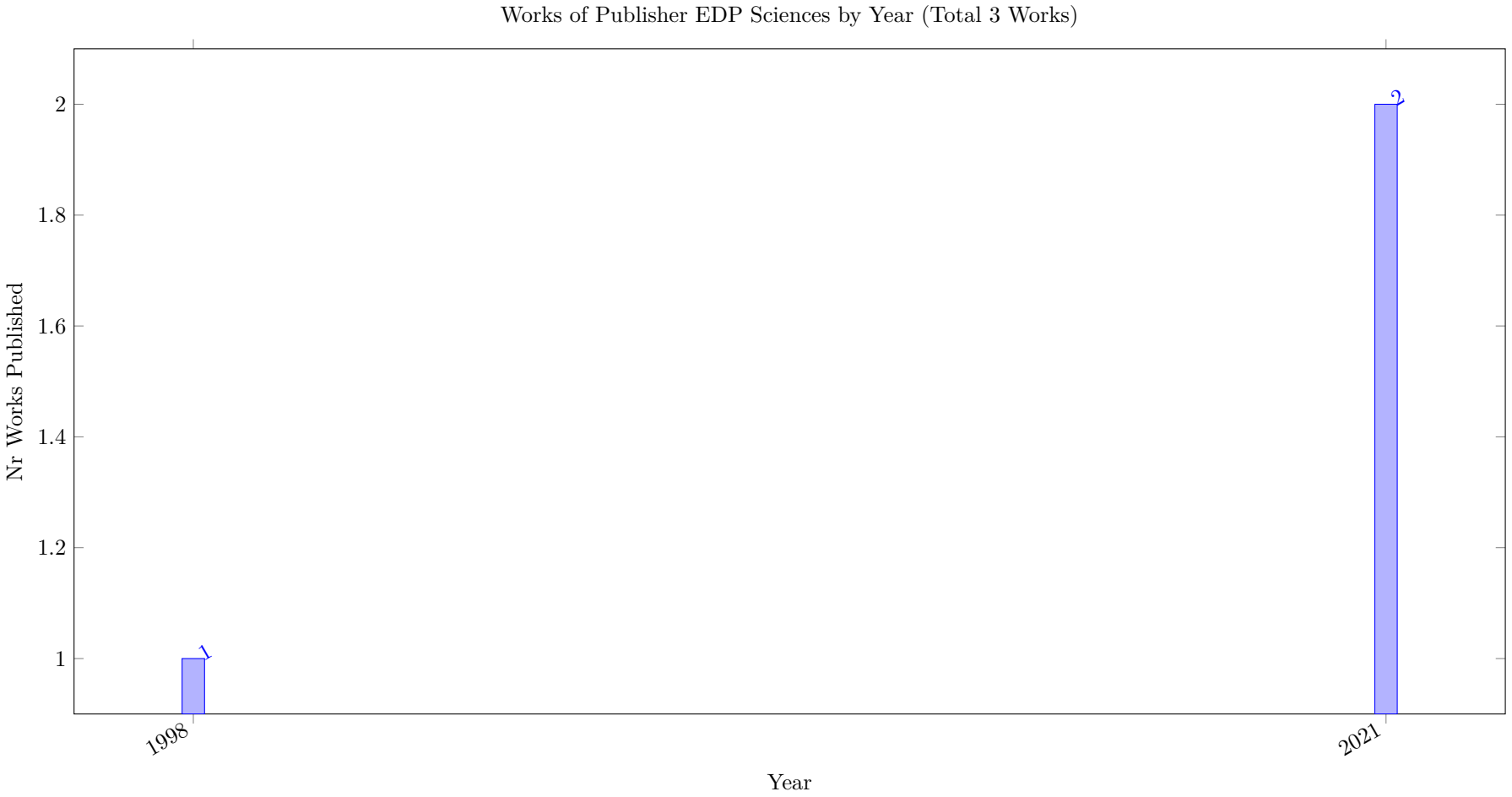
2.3
2.2
2.1
2
1.9
2
1994
Year


Works of Publisher EDP Sciences by Year (Total 3 Works)
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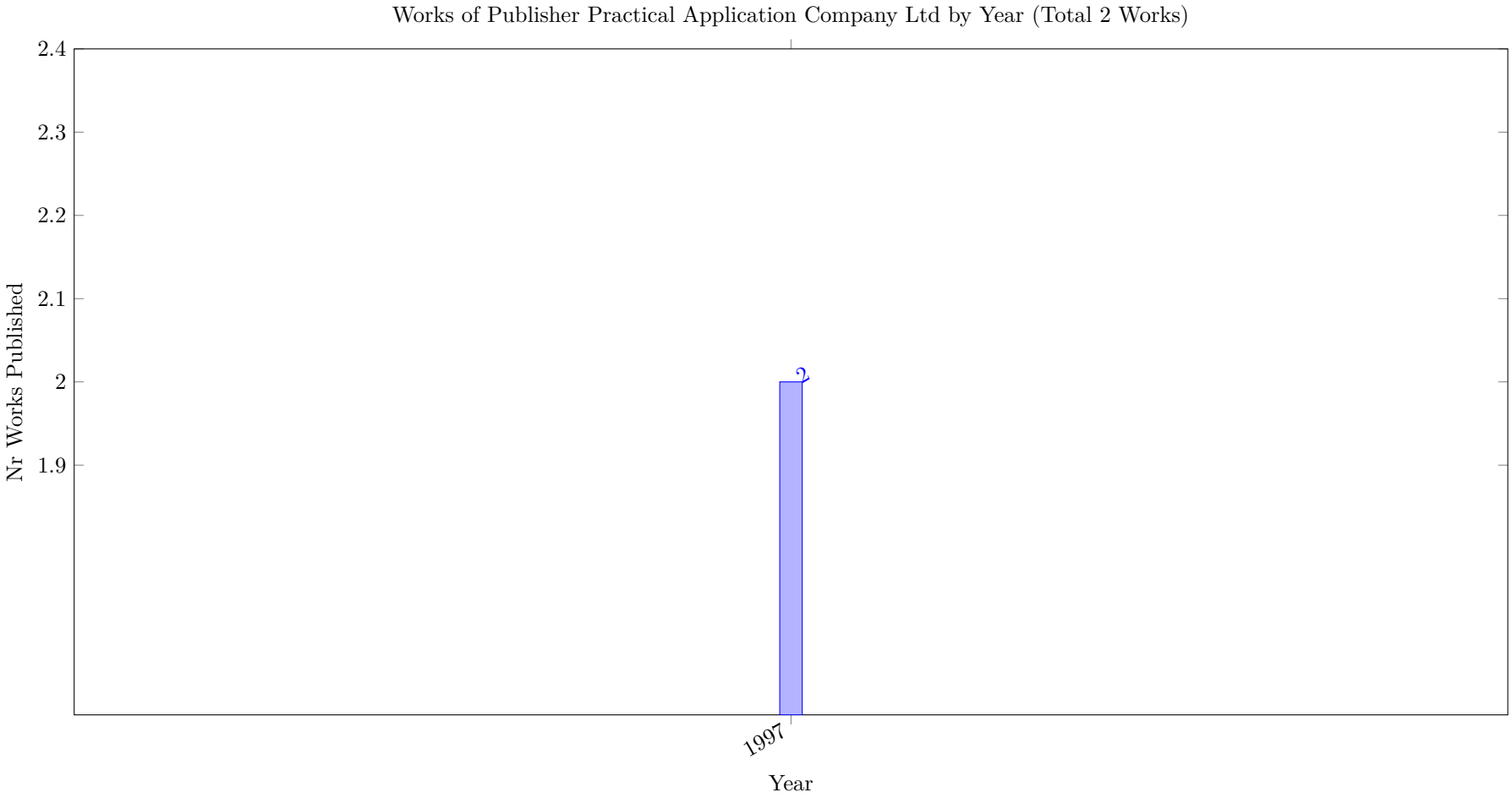
1.6
1.4
1.2
1
1
2
1998
2021
Year


Works of Publisher Practical Application Company Ltd by Year (Total 2 Works)
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2.2
2.1
2
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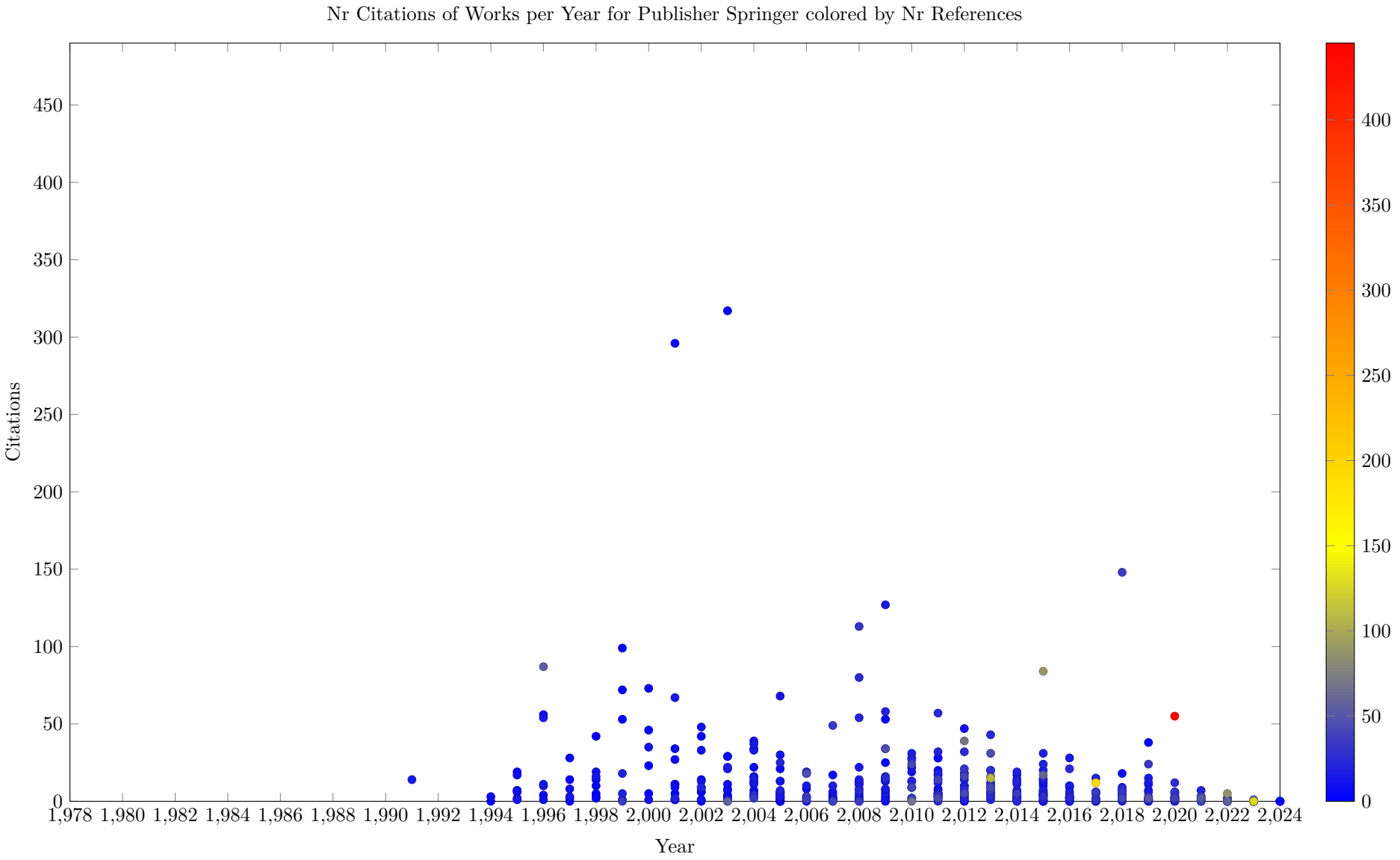
2
1997
Year


Nr Citations of Works per Year for Publisher Springer colored by Nr References
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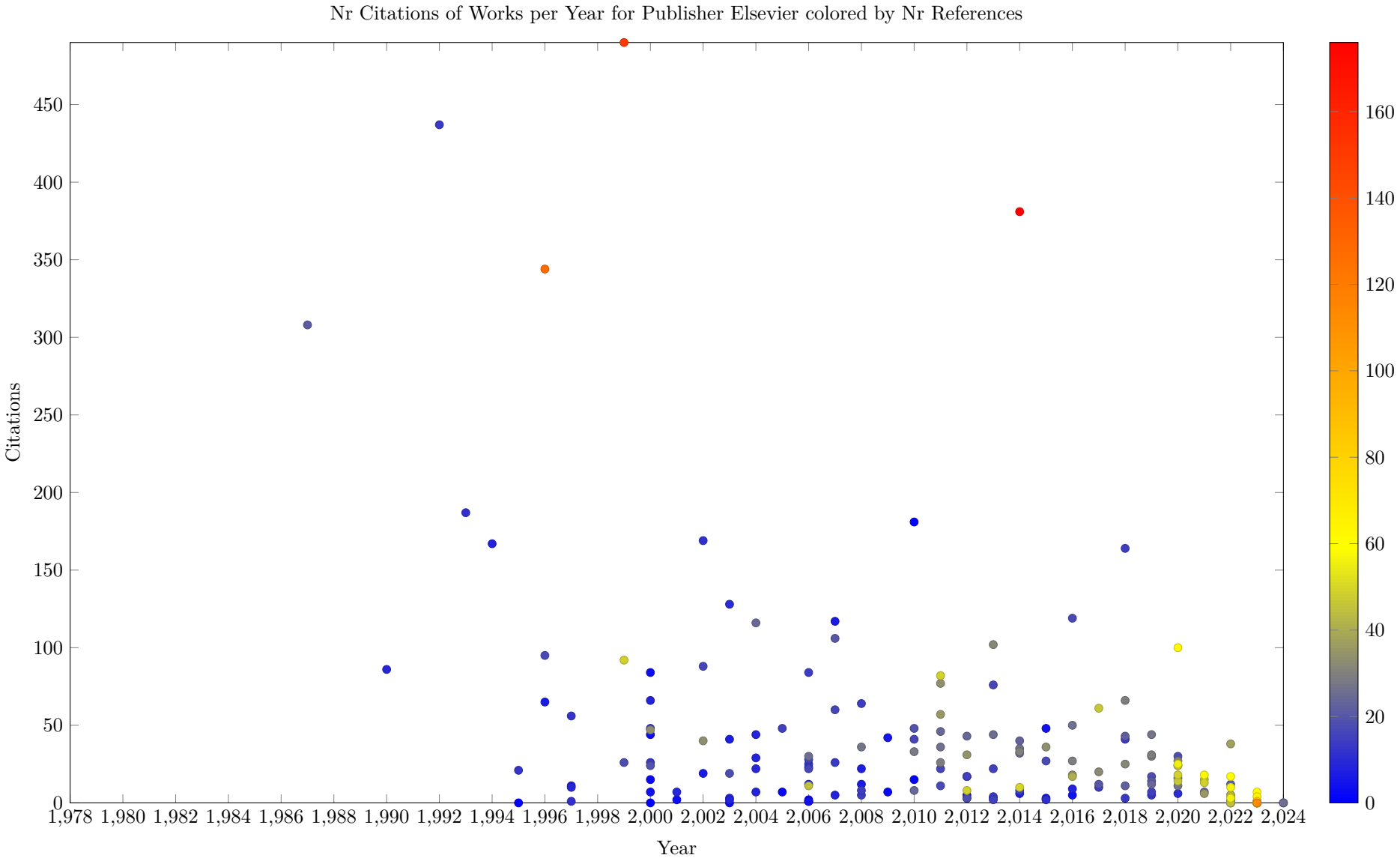
Nr Citations of Works per Year for Publisher Elsevier colored by Nr References
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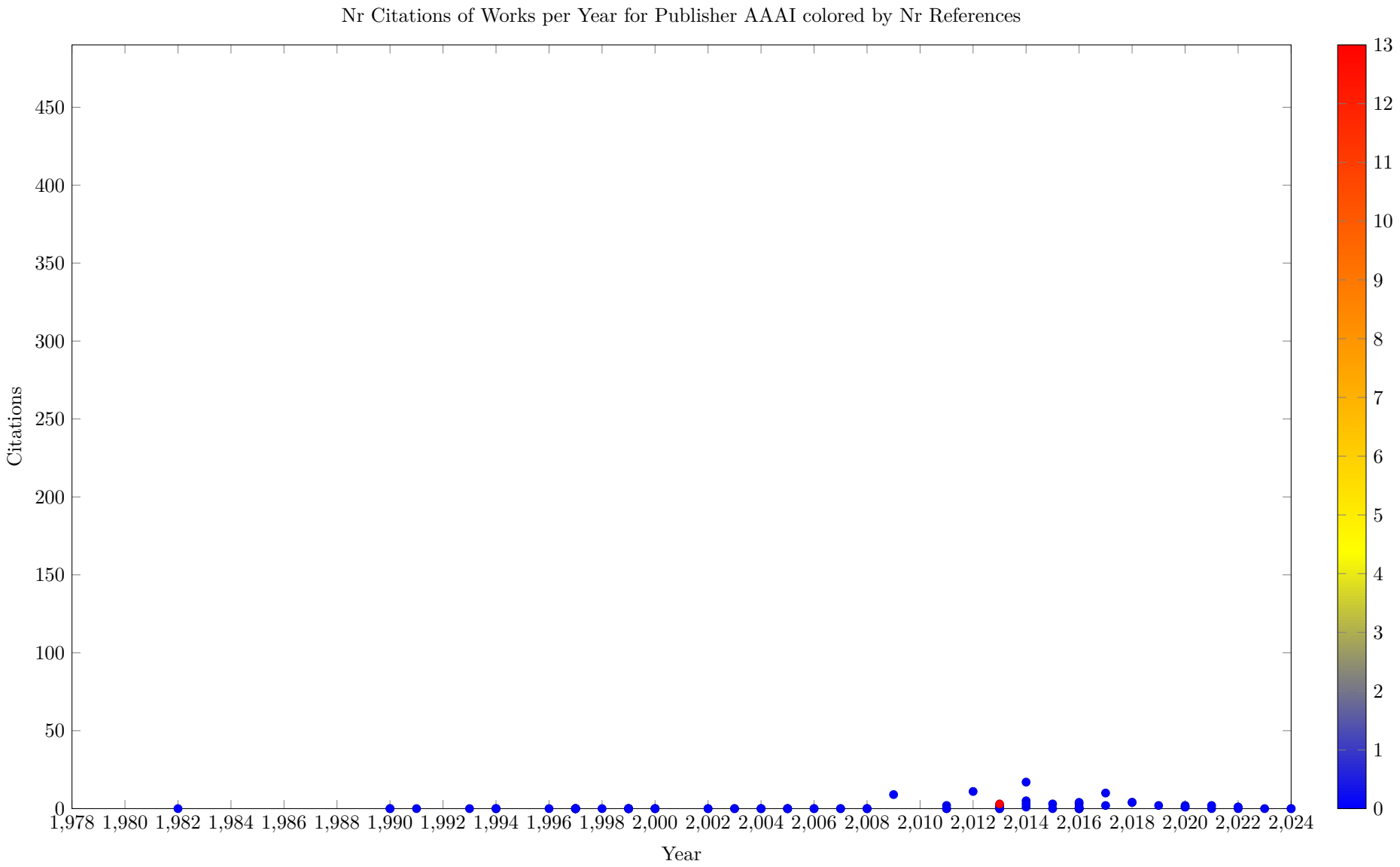
Nr Citations of Works per Year for Publisher AAAI colored by Nr References
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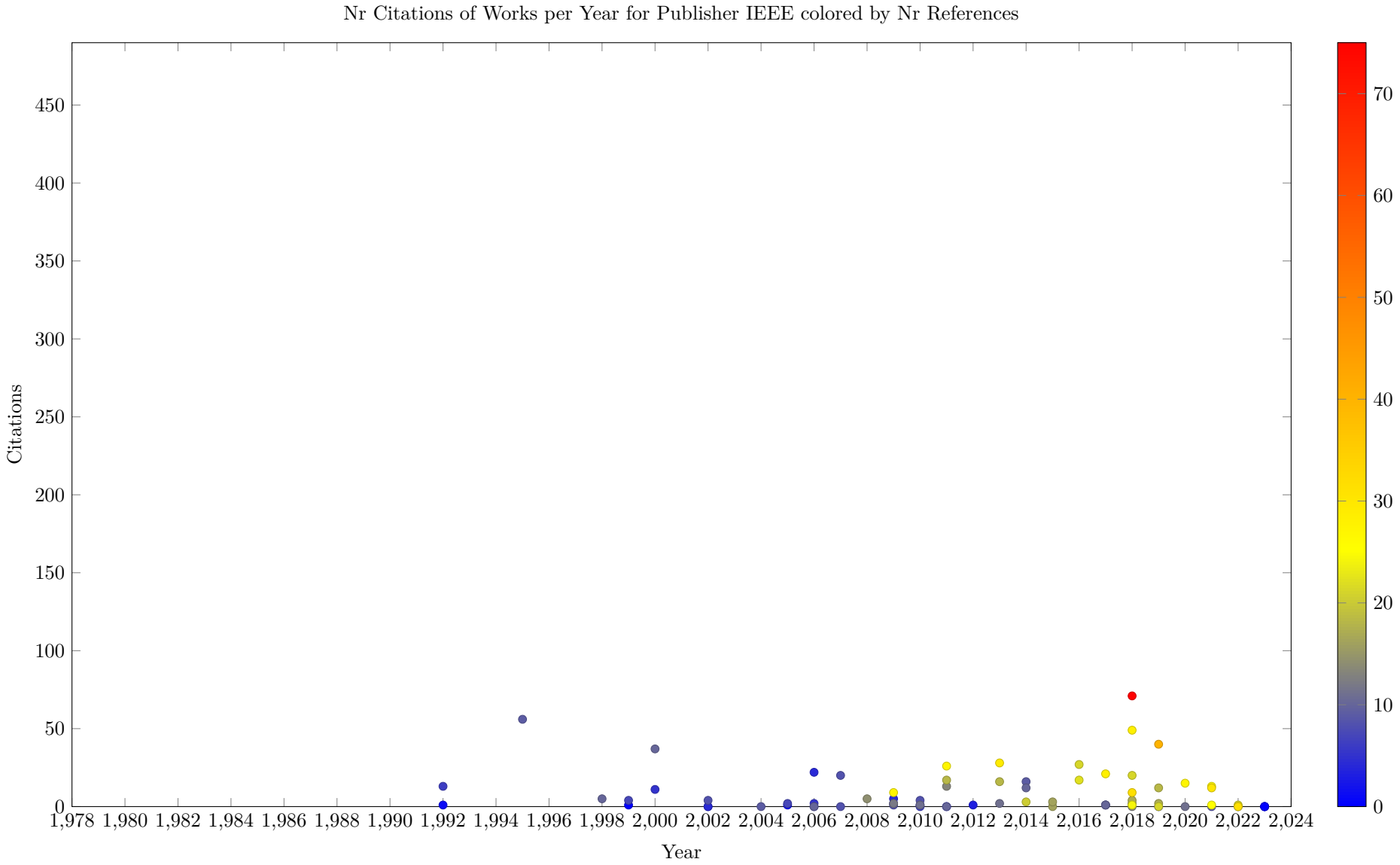
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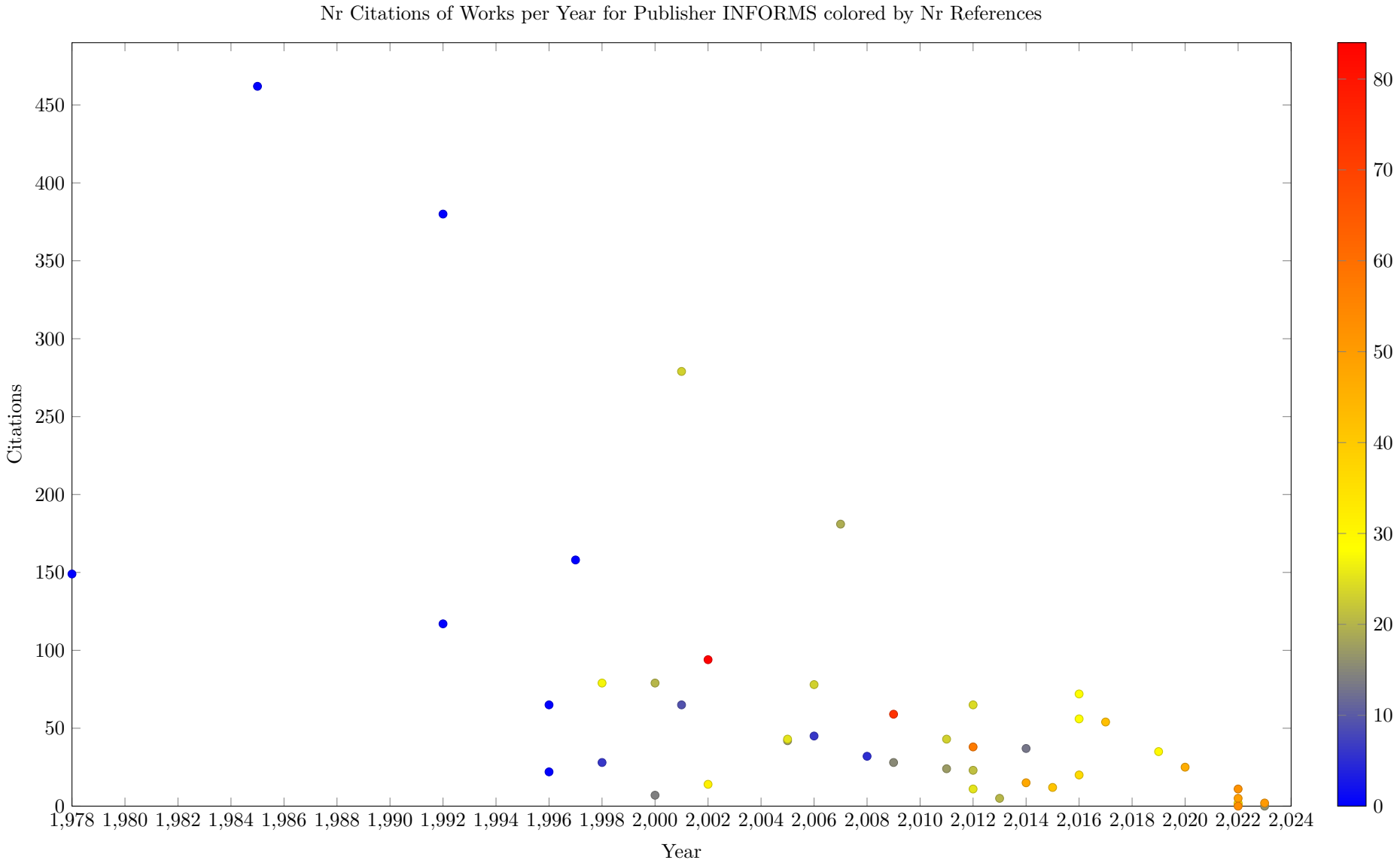
Nr Citations of Works per Year for Publisher INFORMS colored by Nr References
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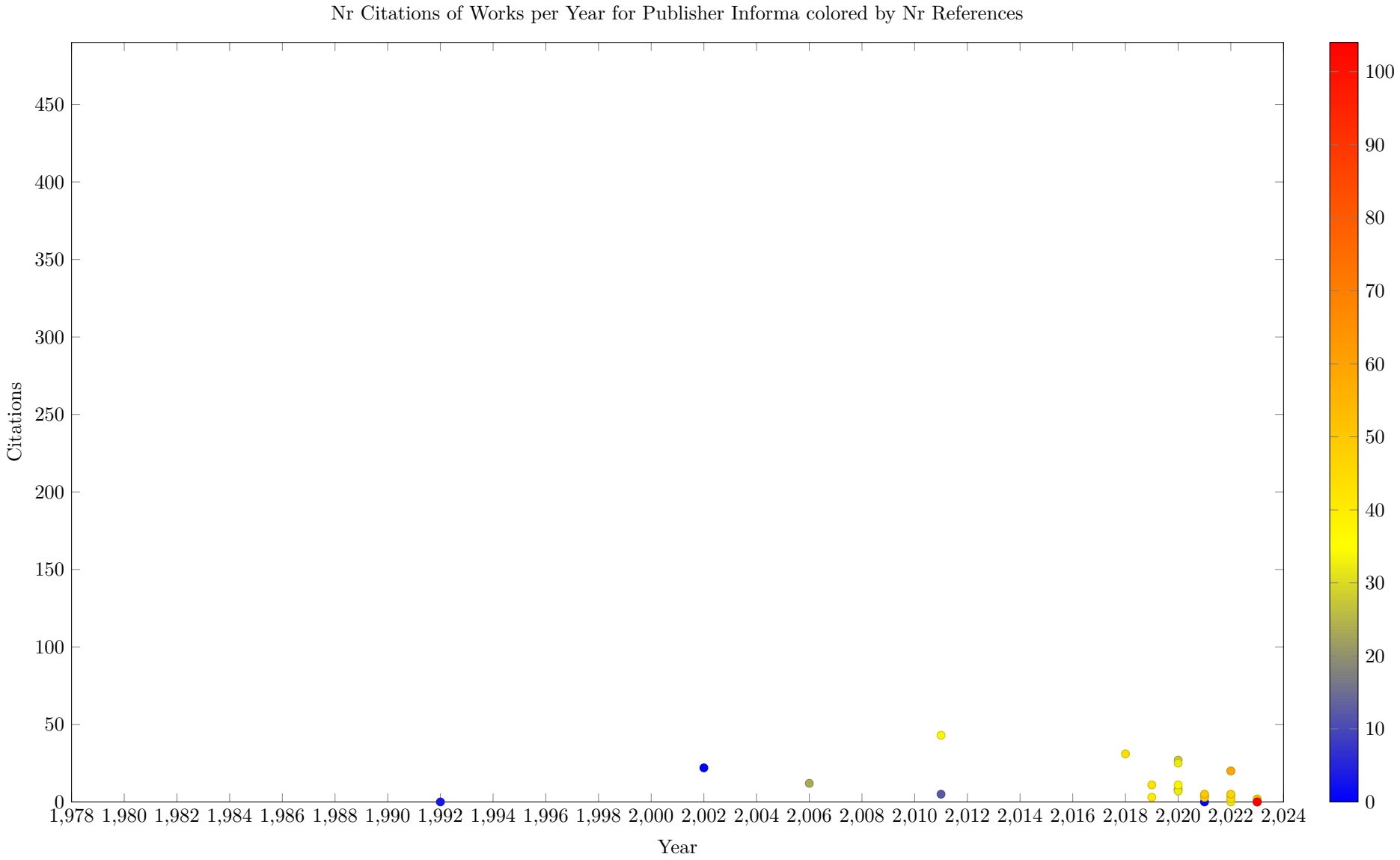
Nr Citations of Works per Year for Publisher Informa colored by Nr References
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Year
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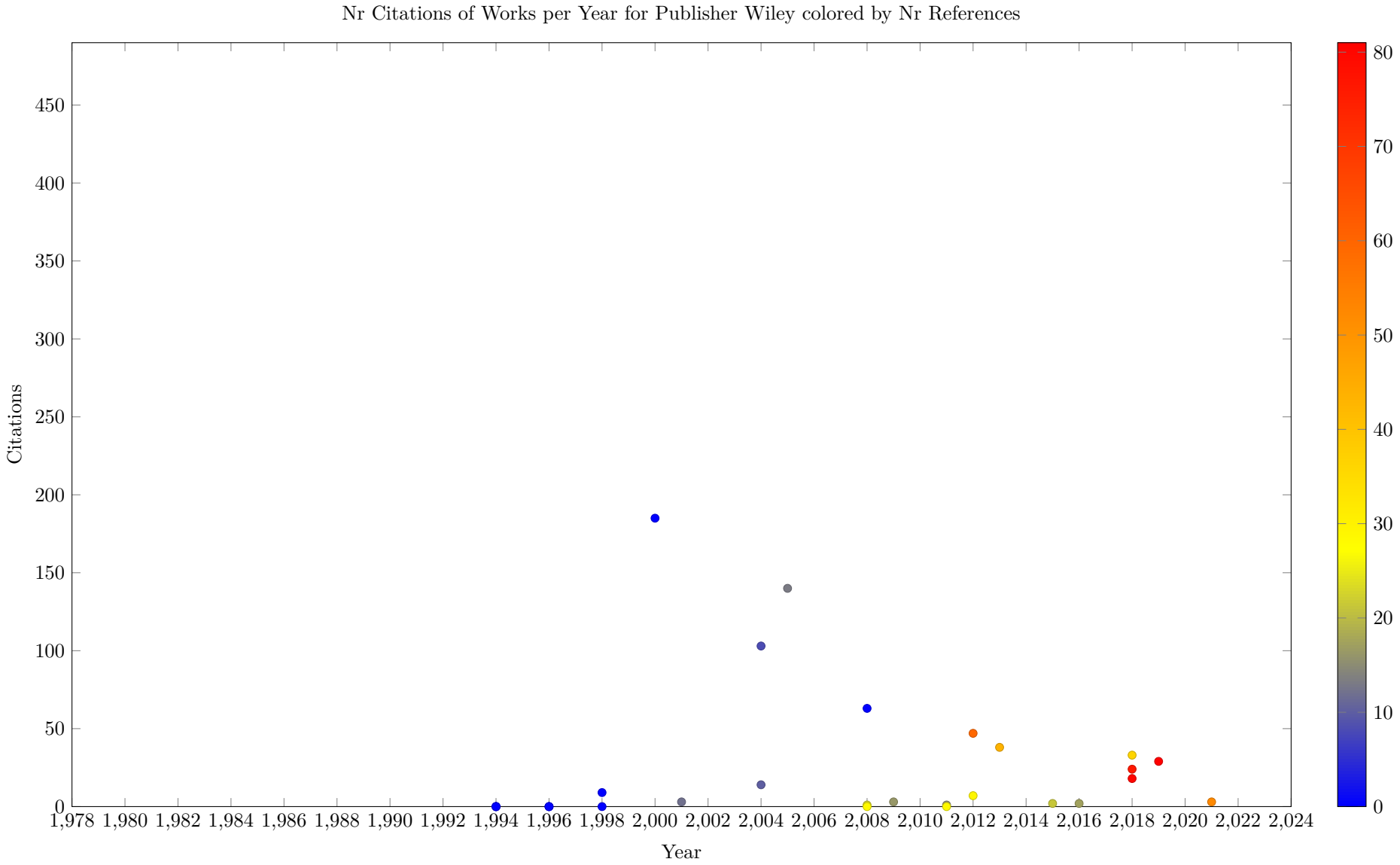
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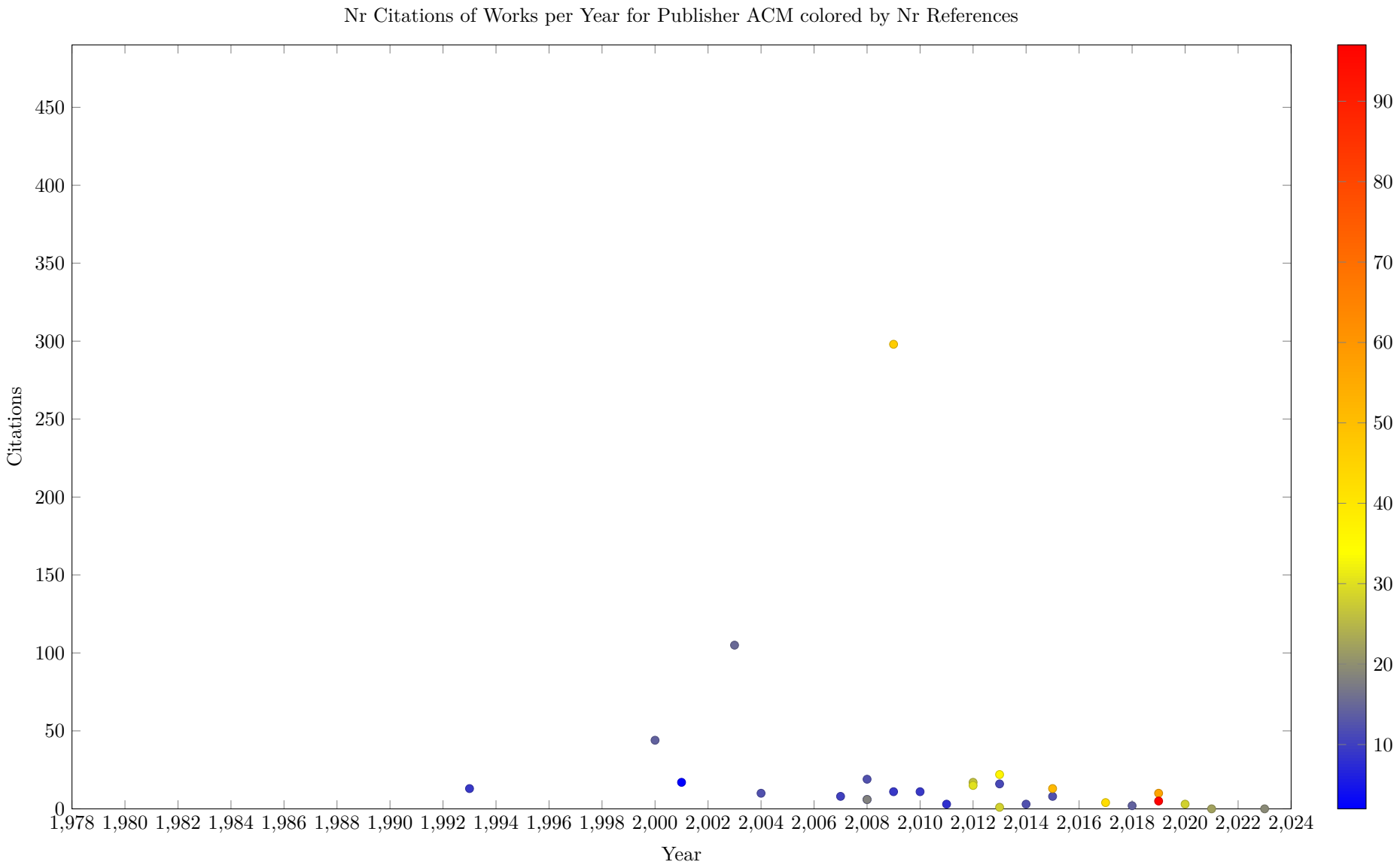
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Nr Citations of Works per Year for Publisher MDPI colored by Nr References
Citations
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Year
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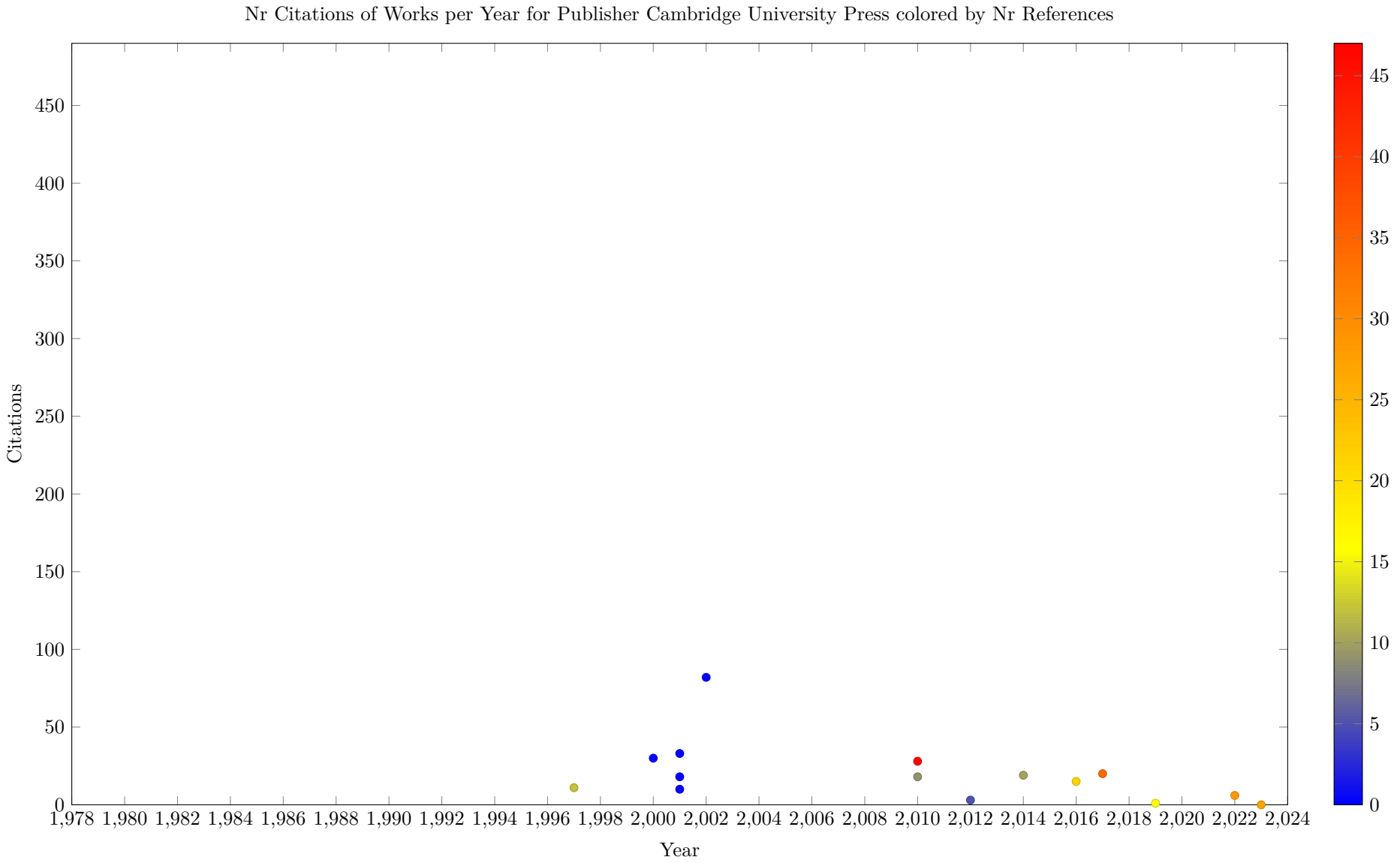
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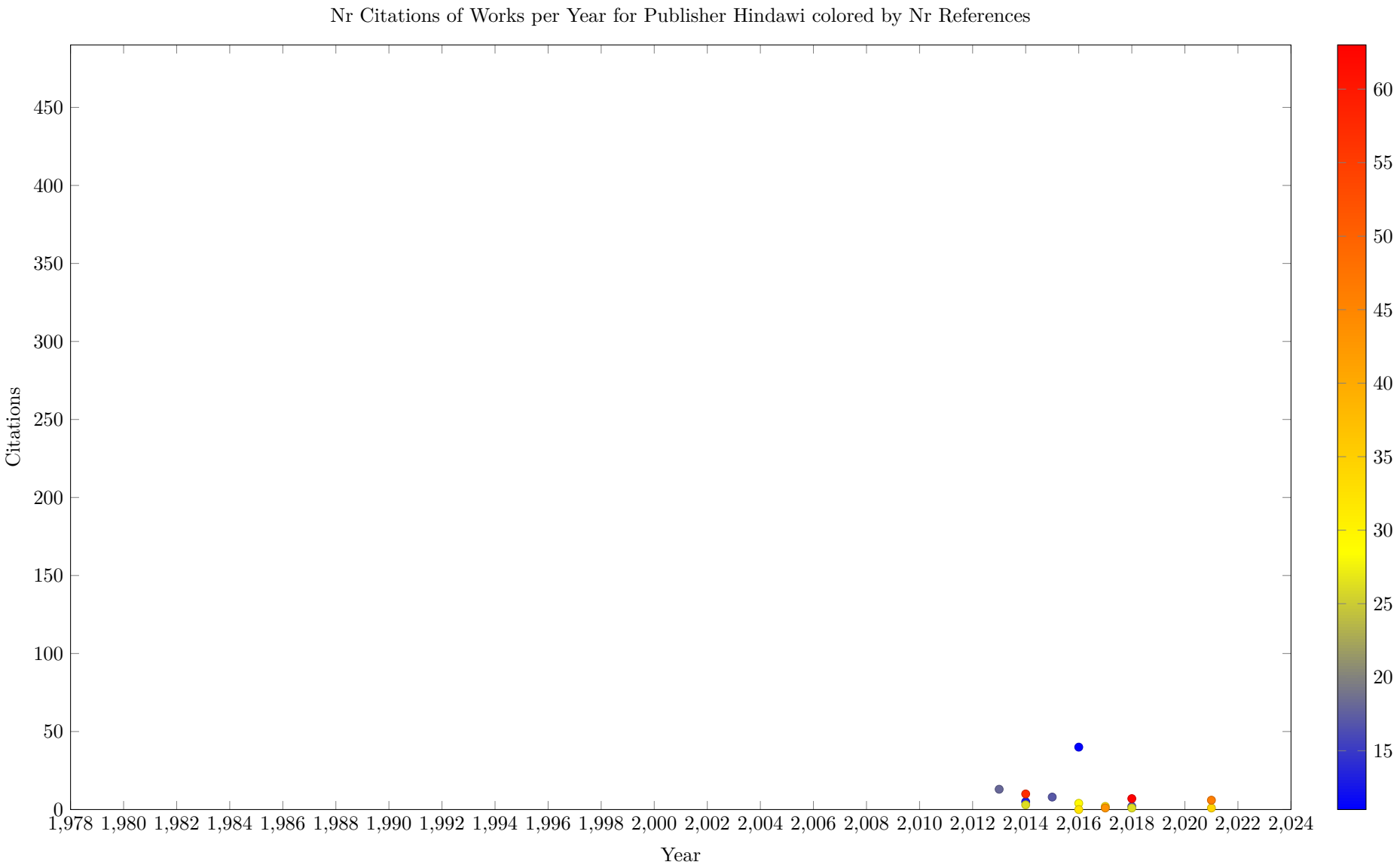
Nr Citations of Works per Year for Publisher Hindawi colored by Nr References
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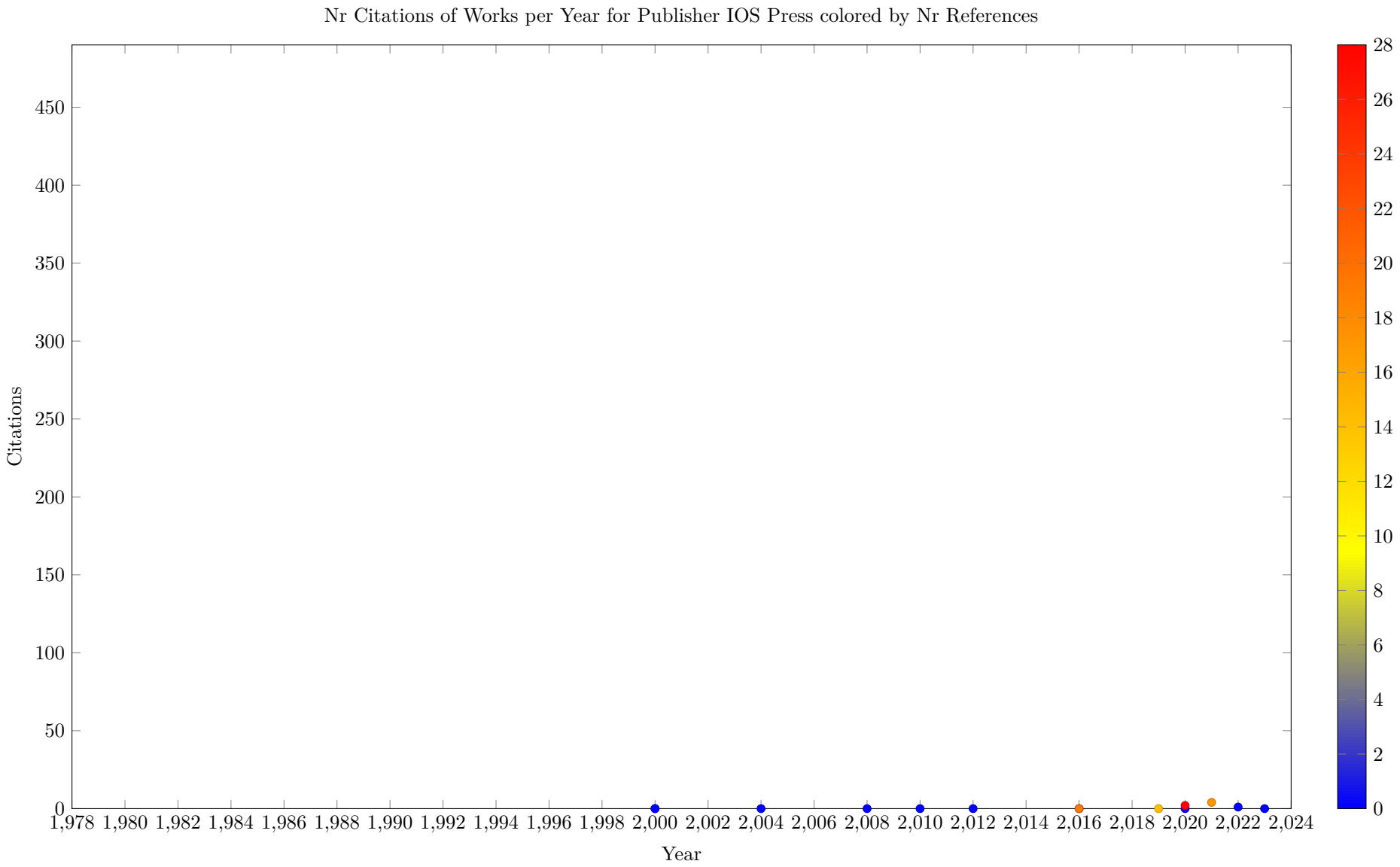
Nr Citations of Works per Year for Publisher IOS Press colored by Nr References
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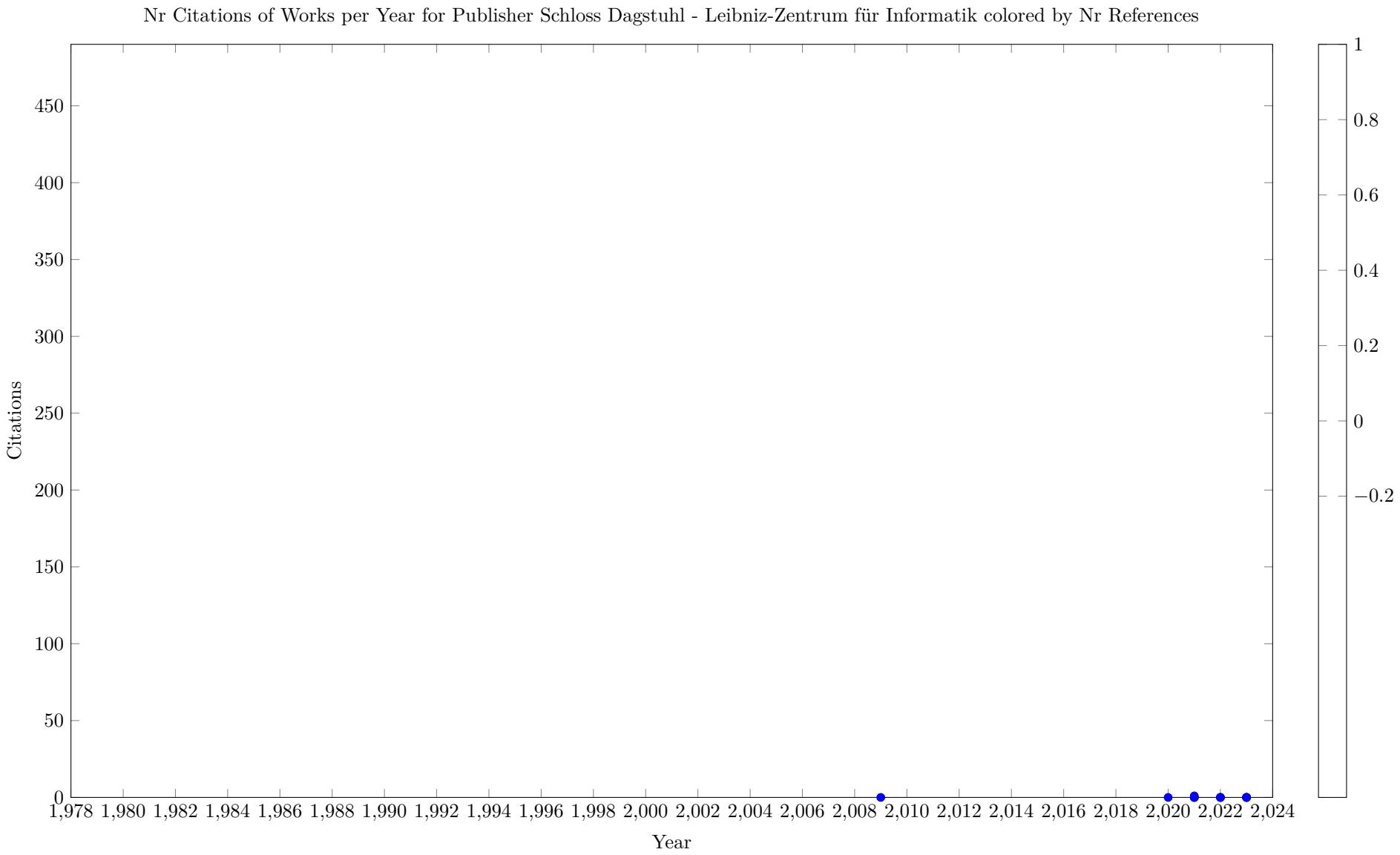
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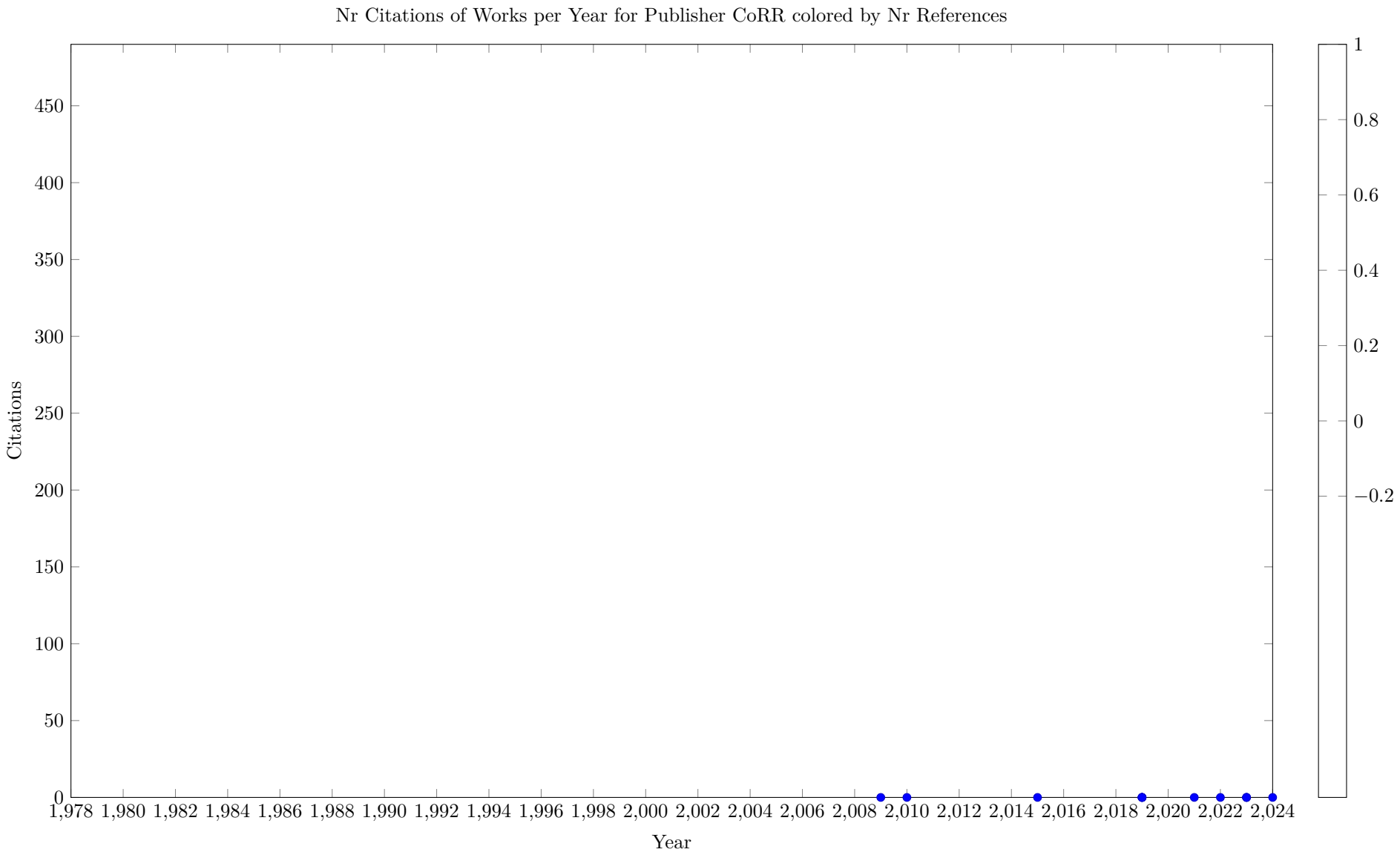
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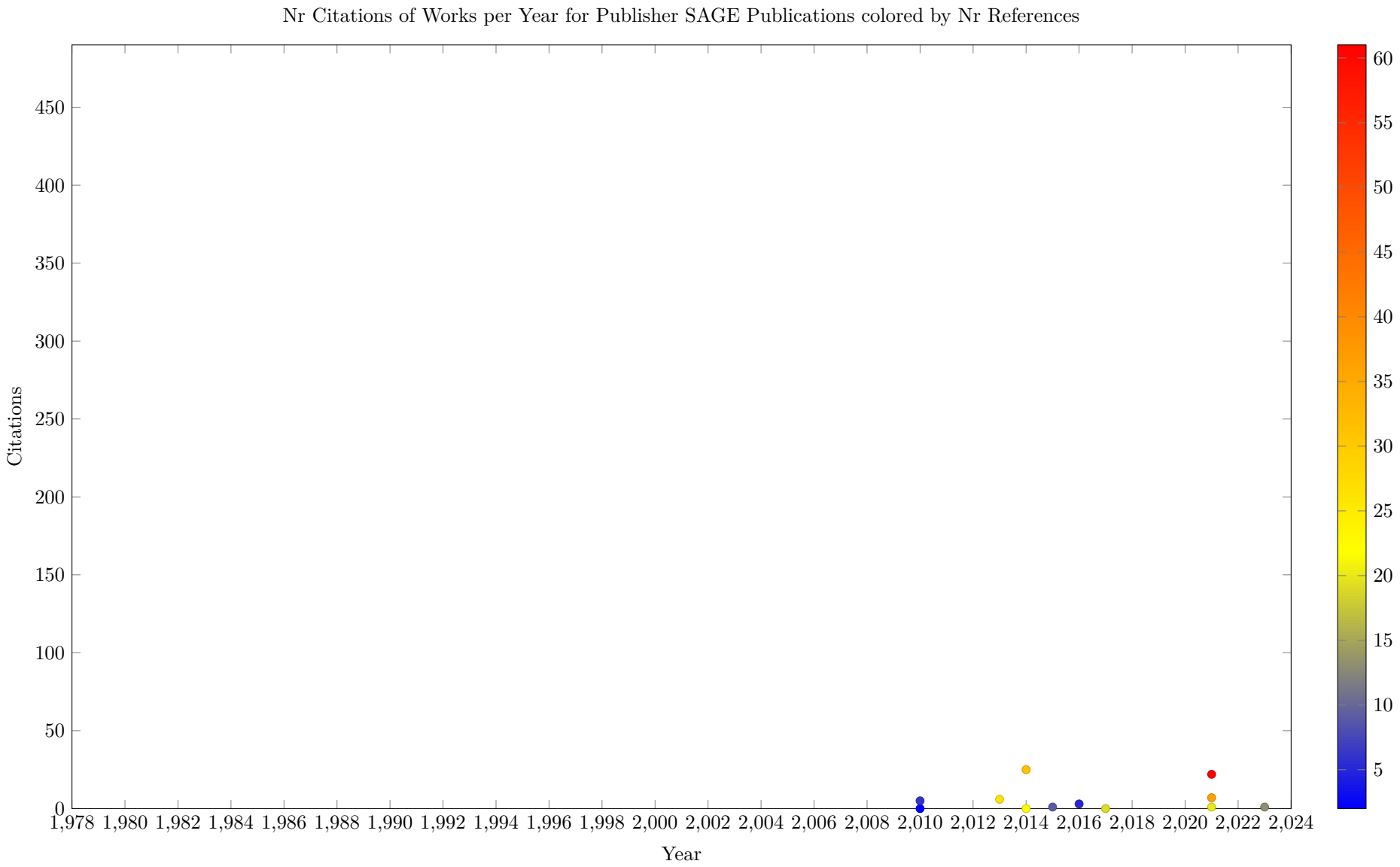
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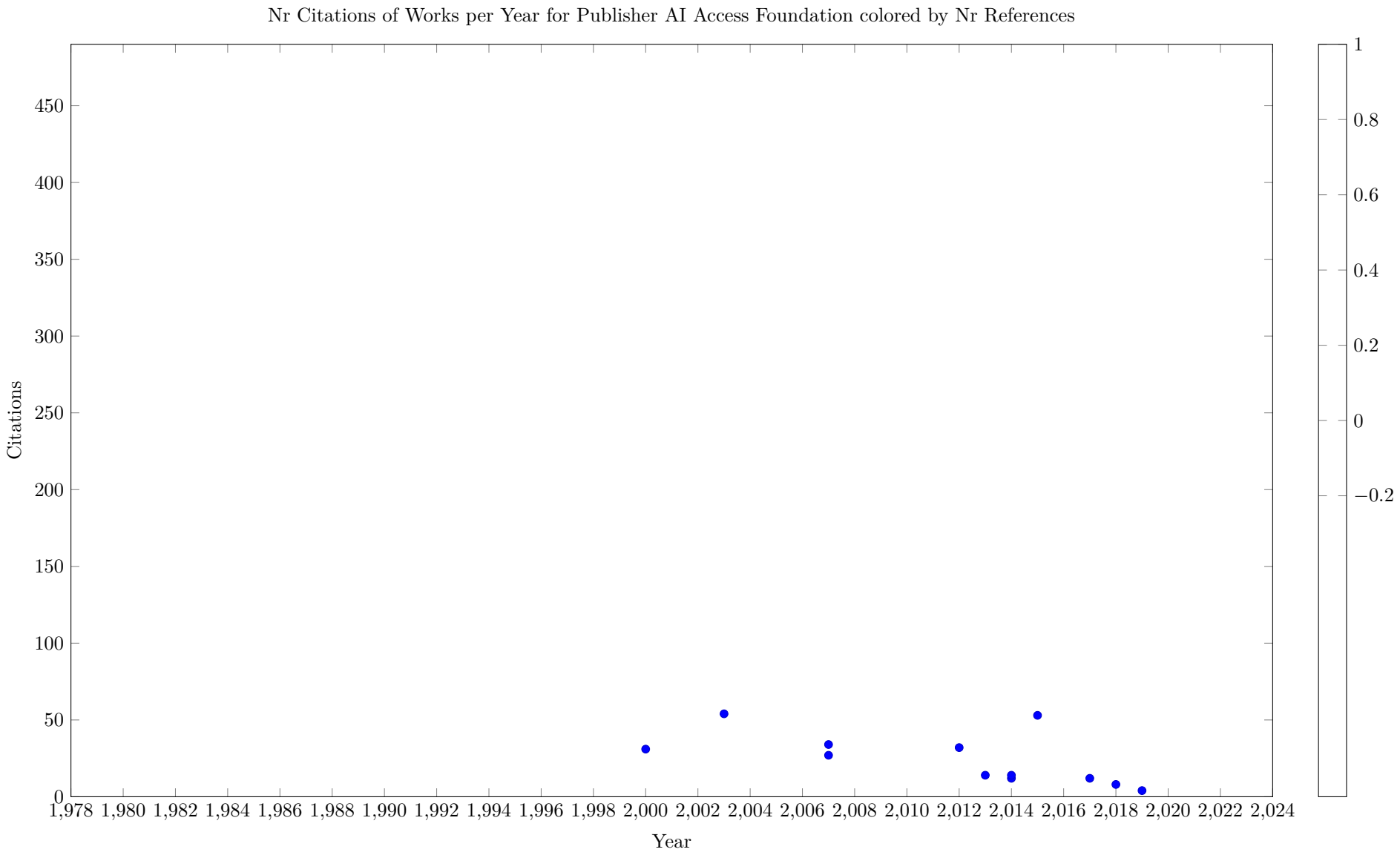
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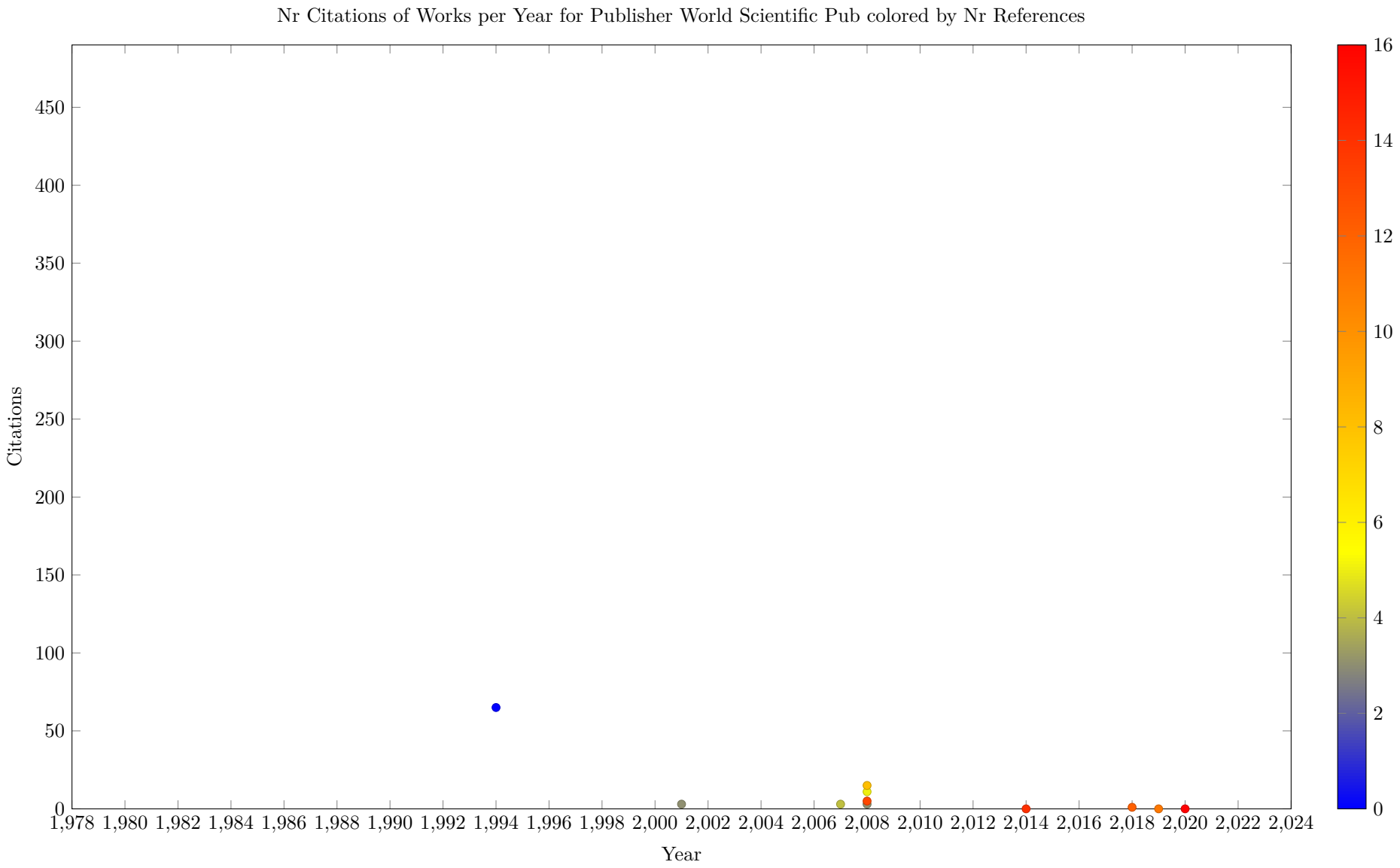
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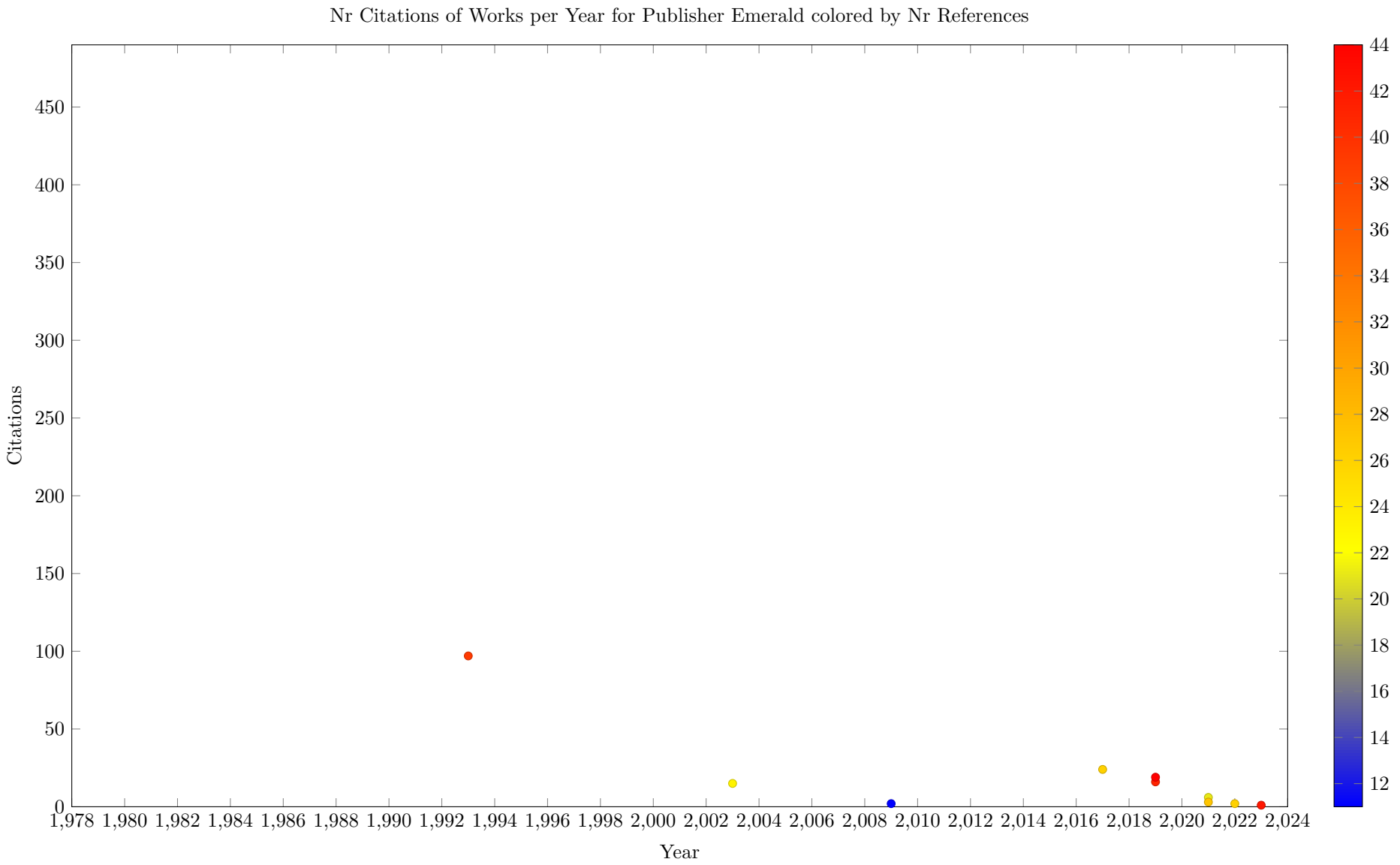
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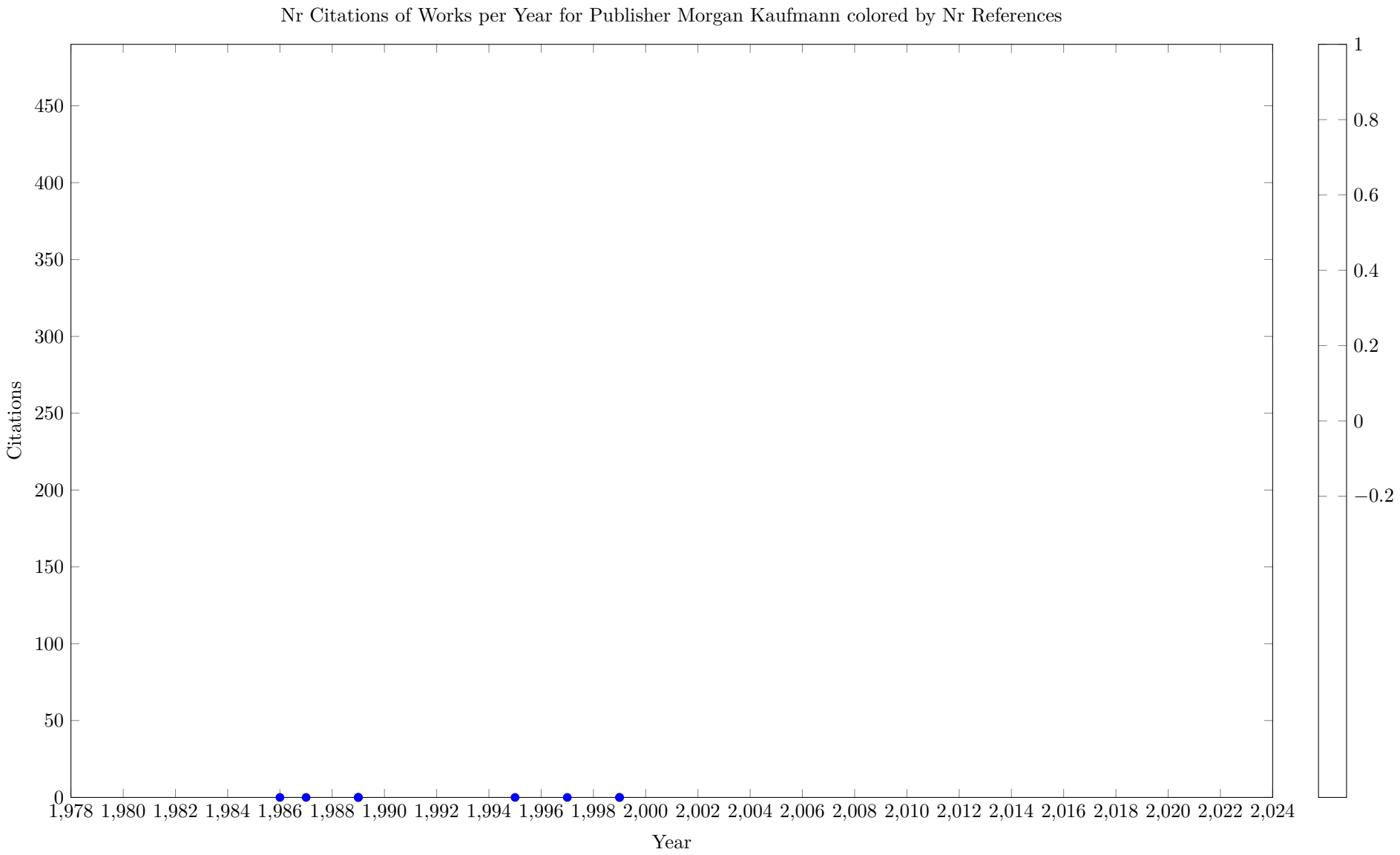
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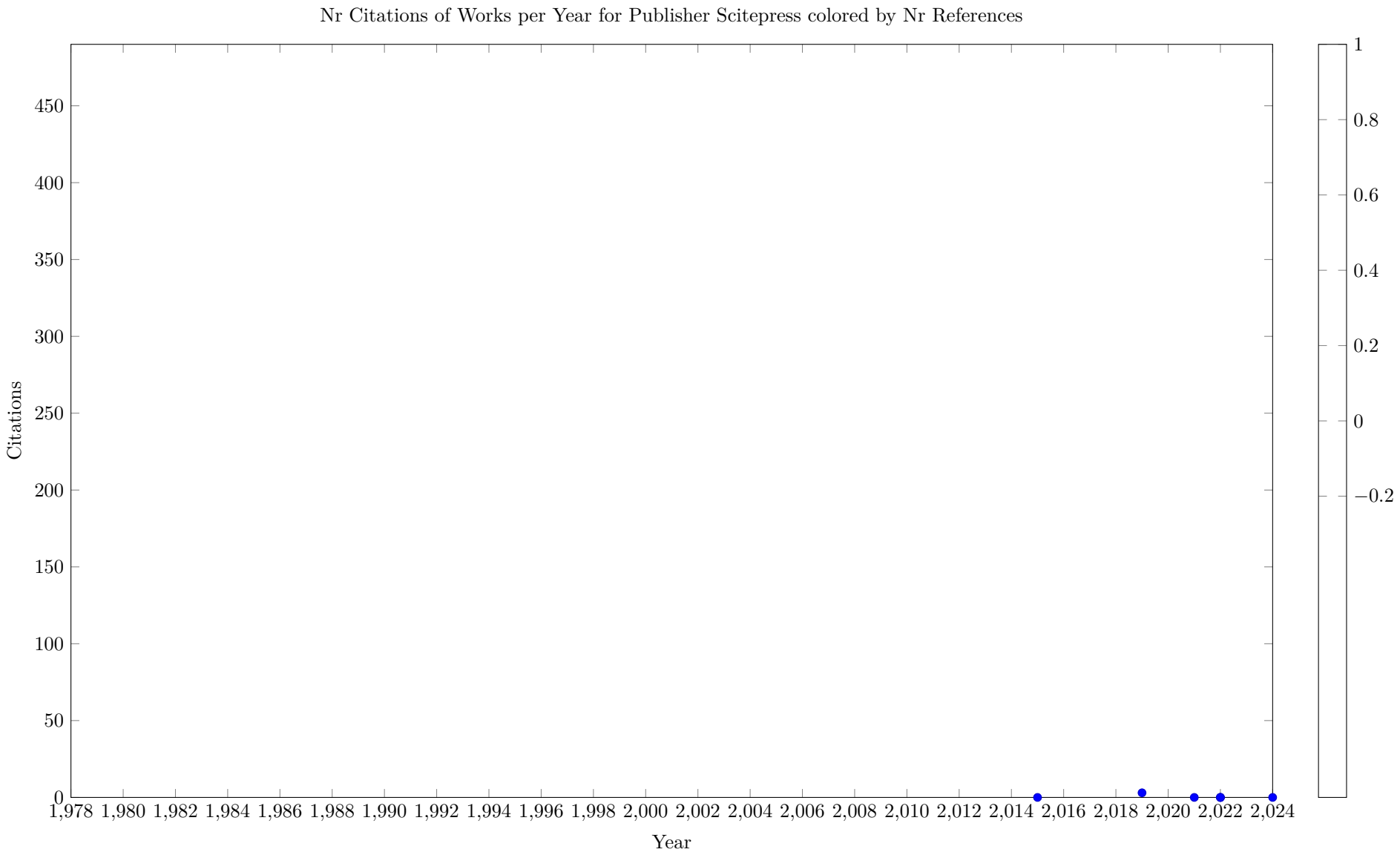
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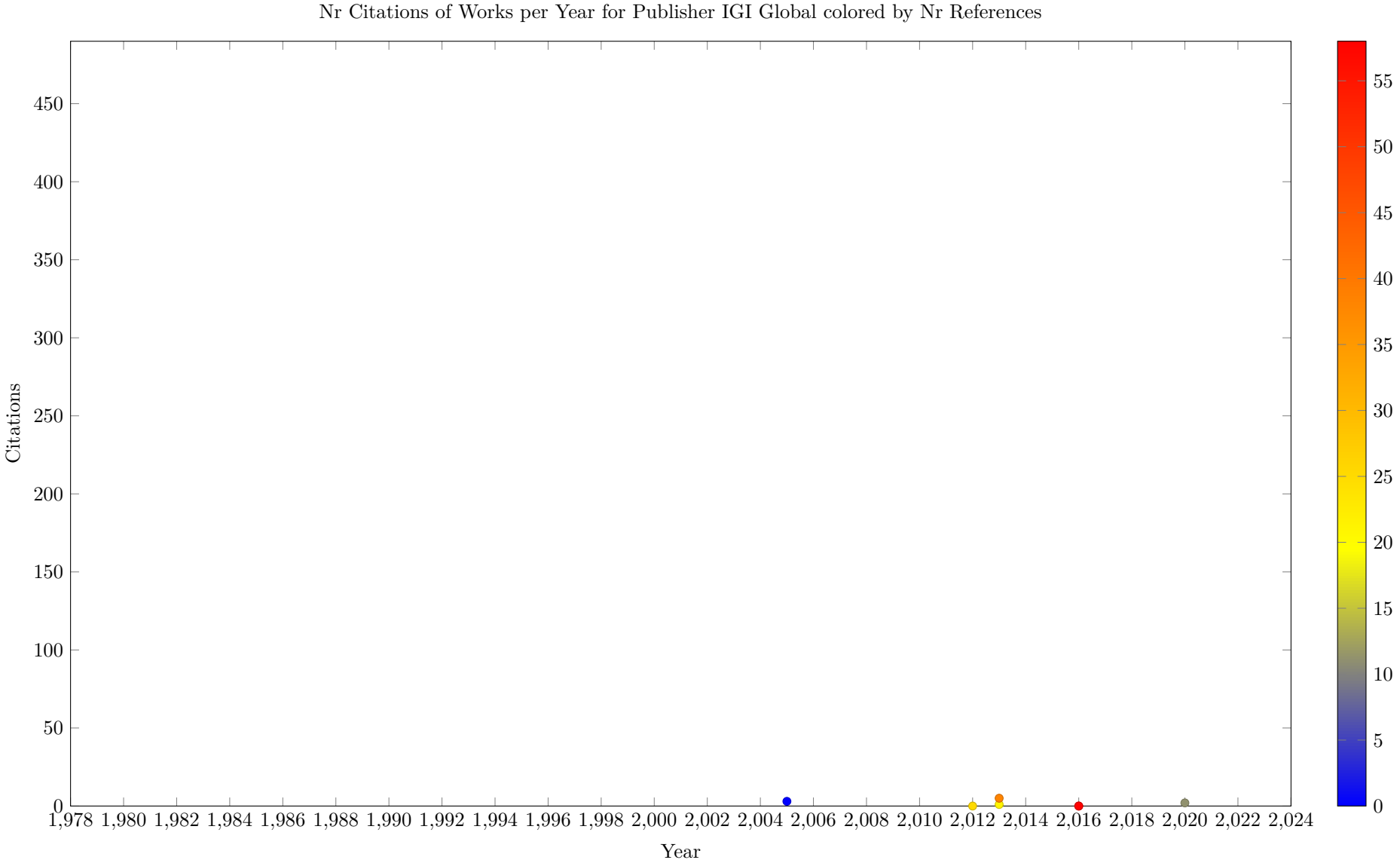
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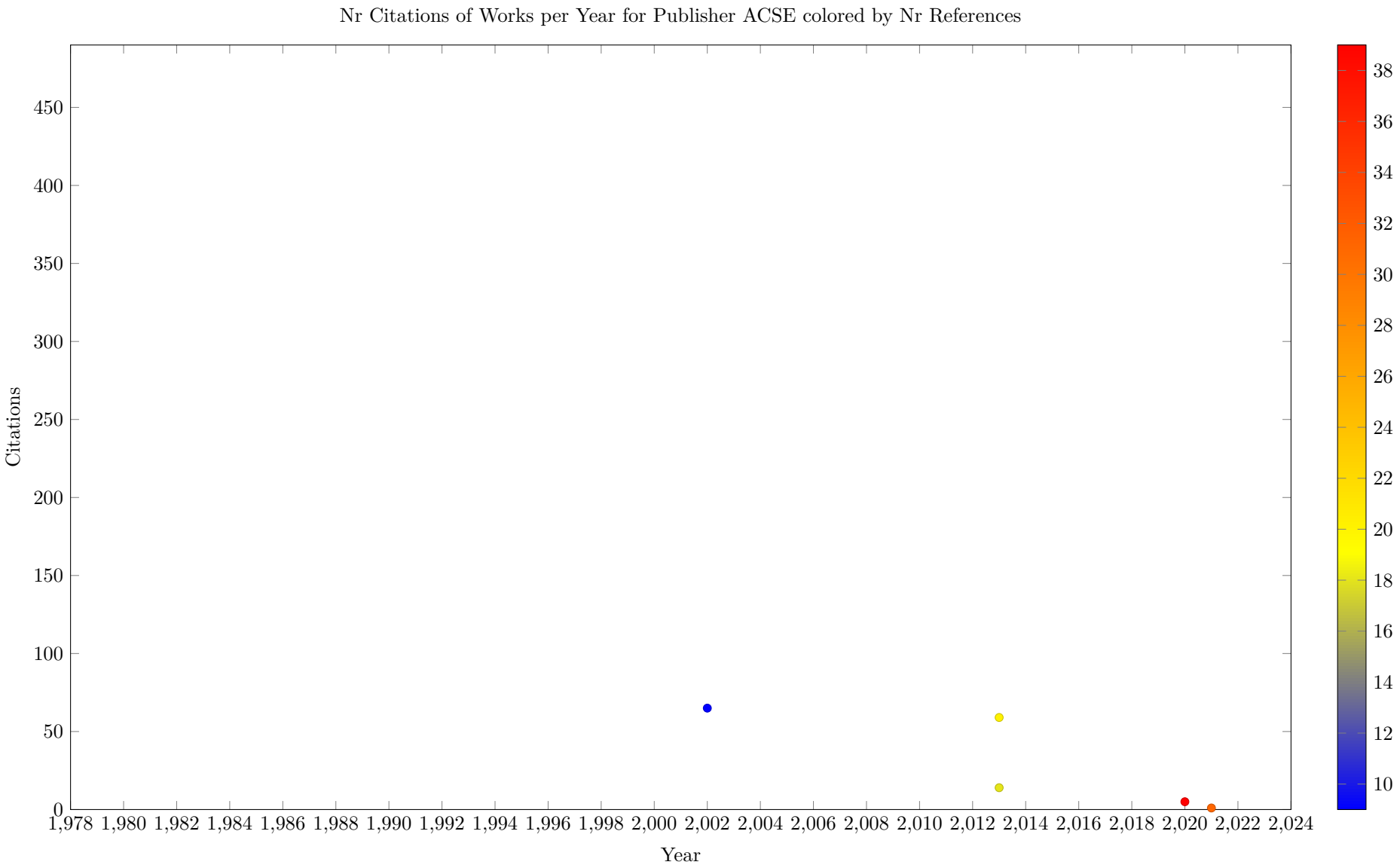
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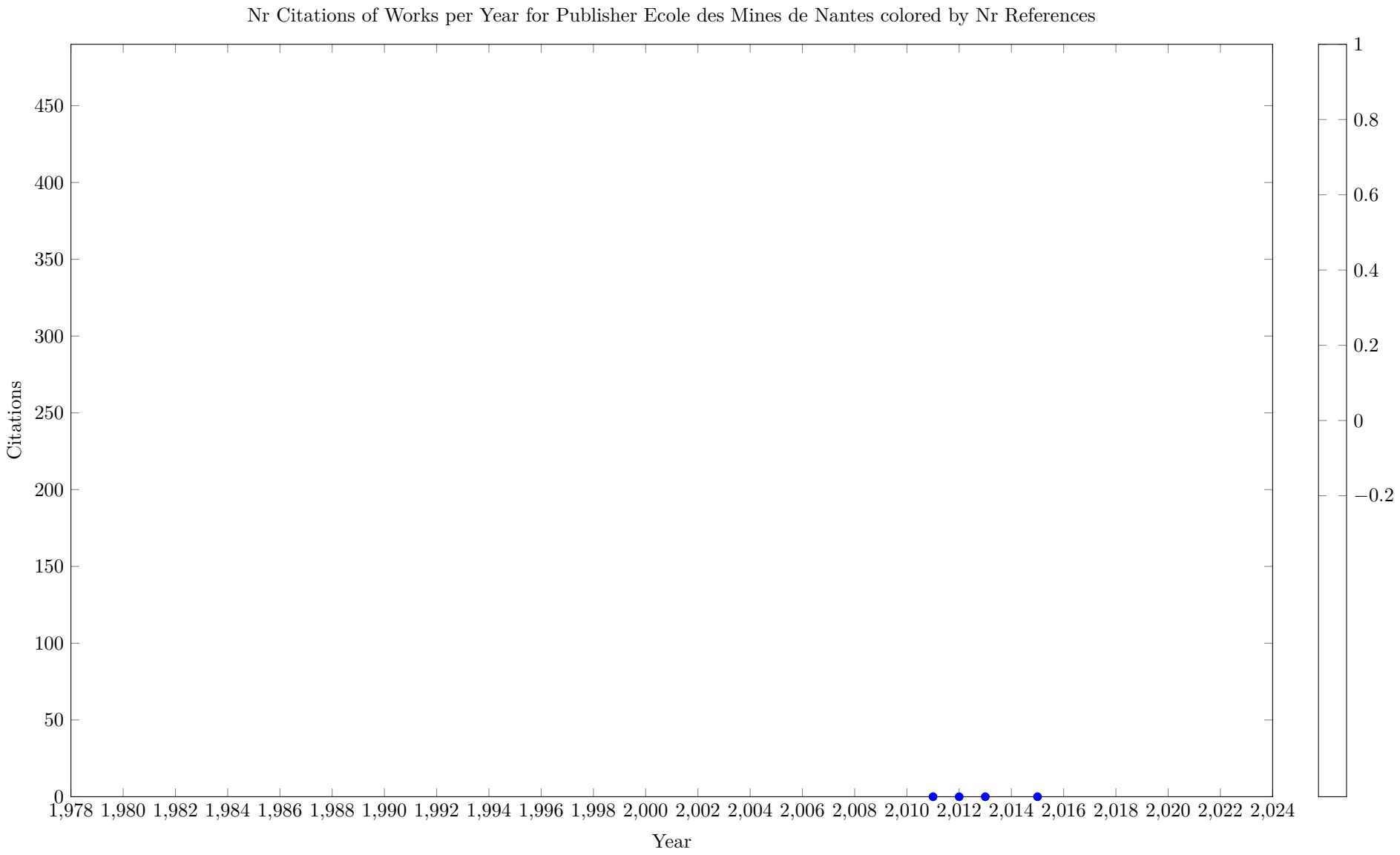
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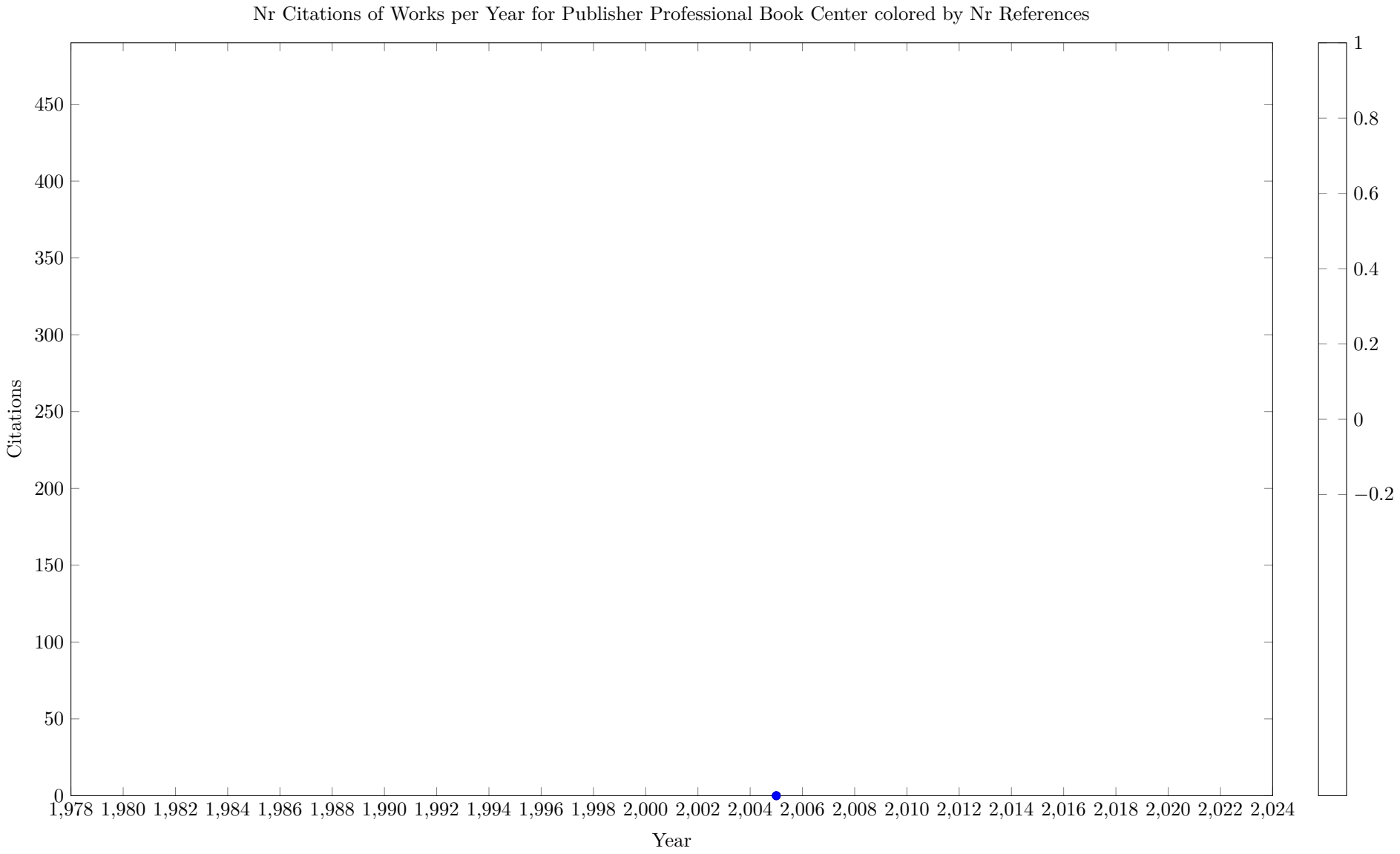
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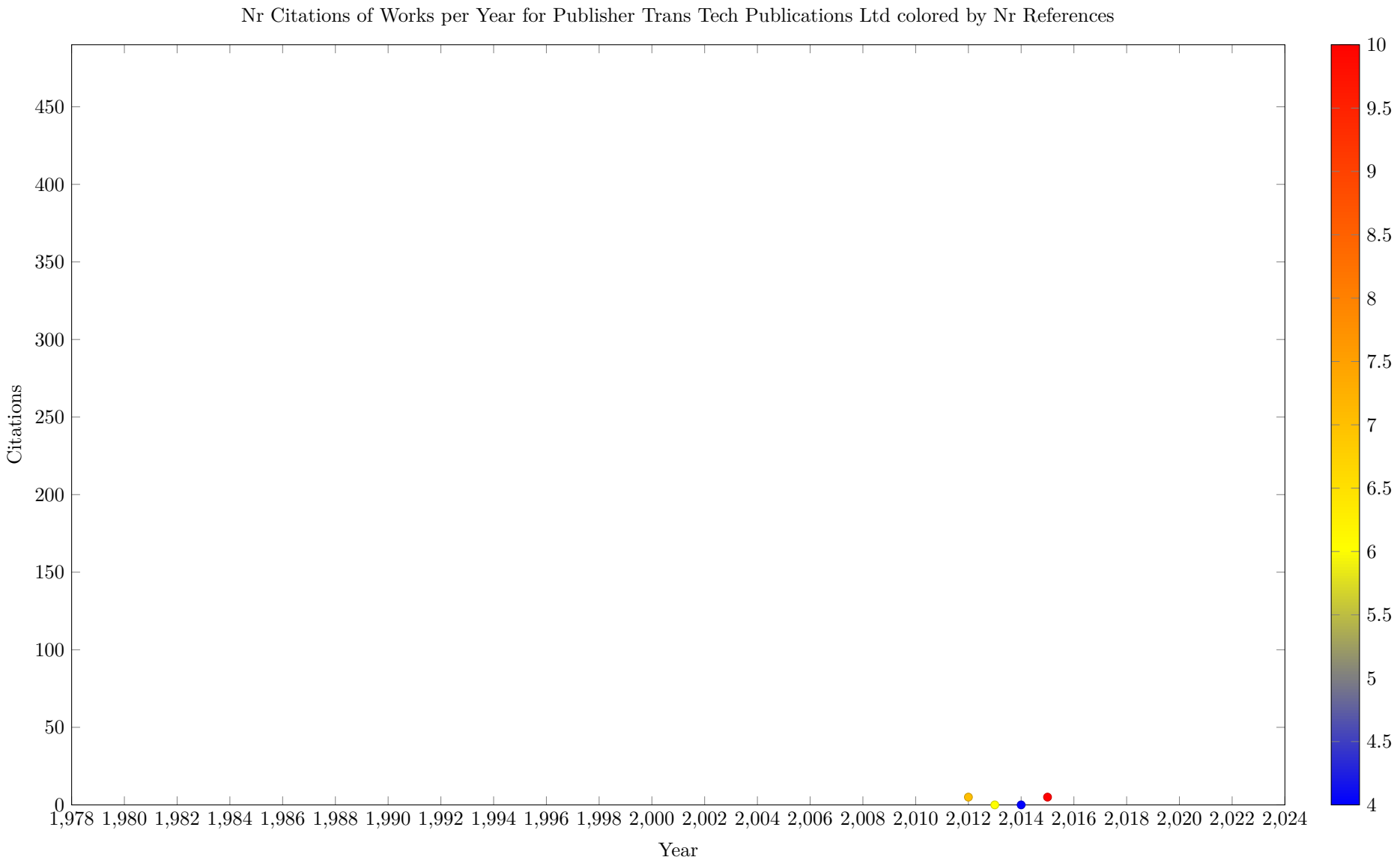
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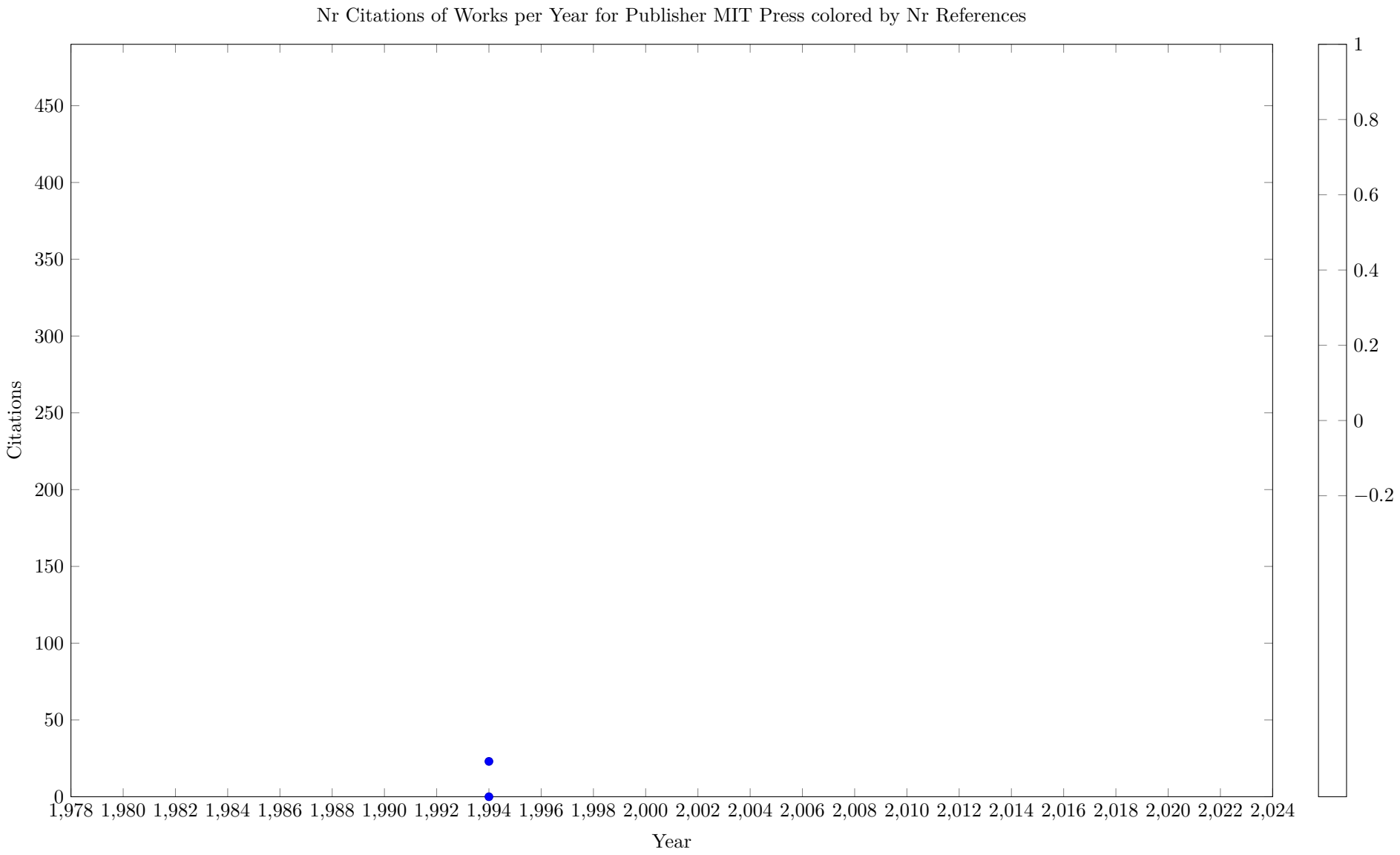
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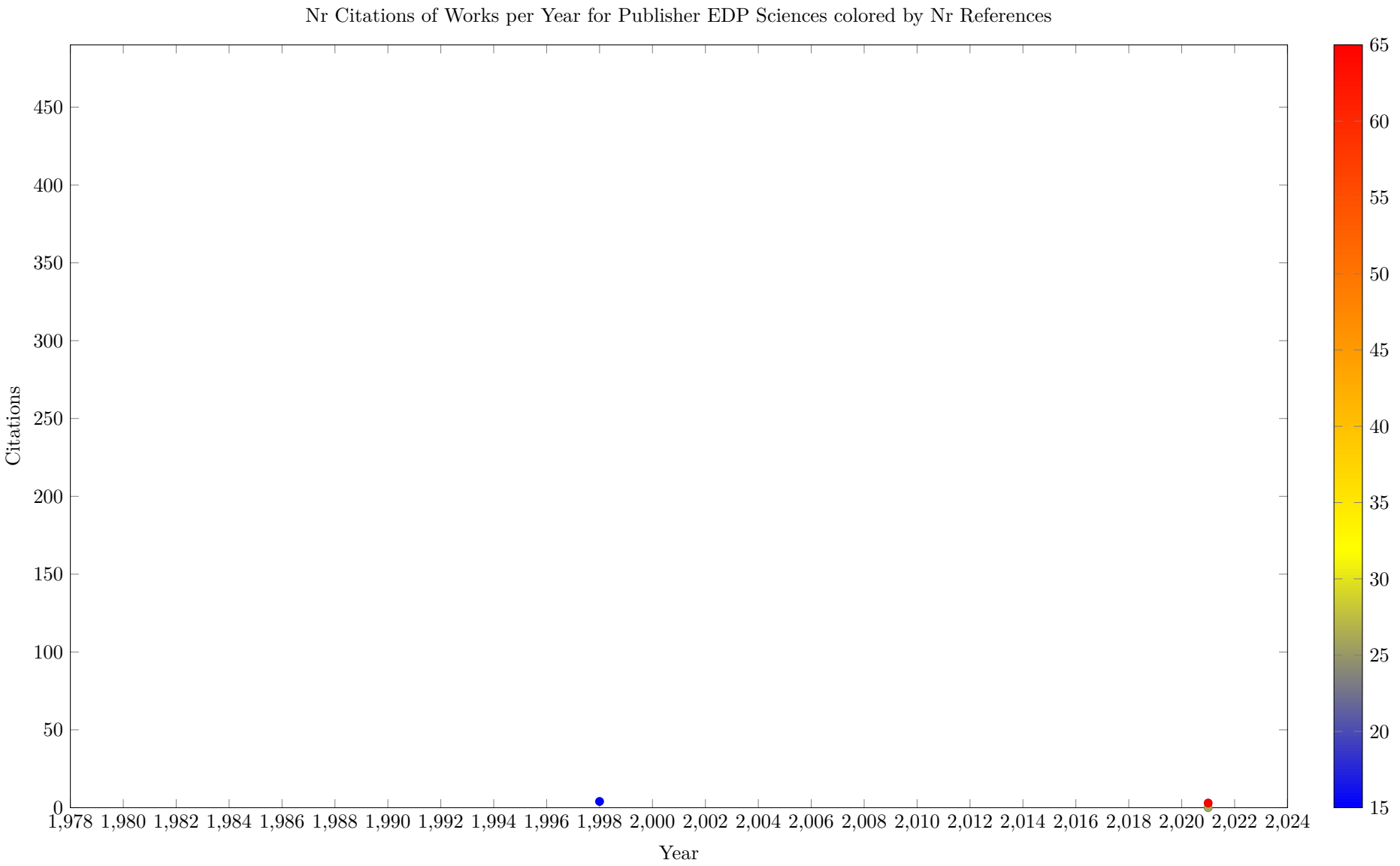
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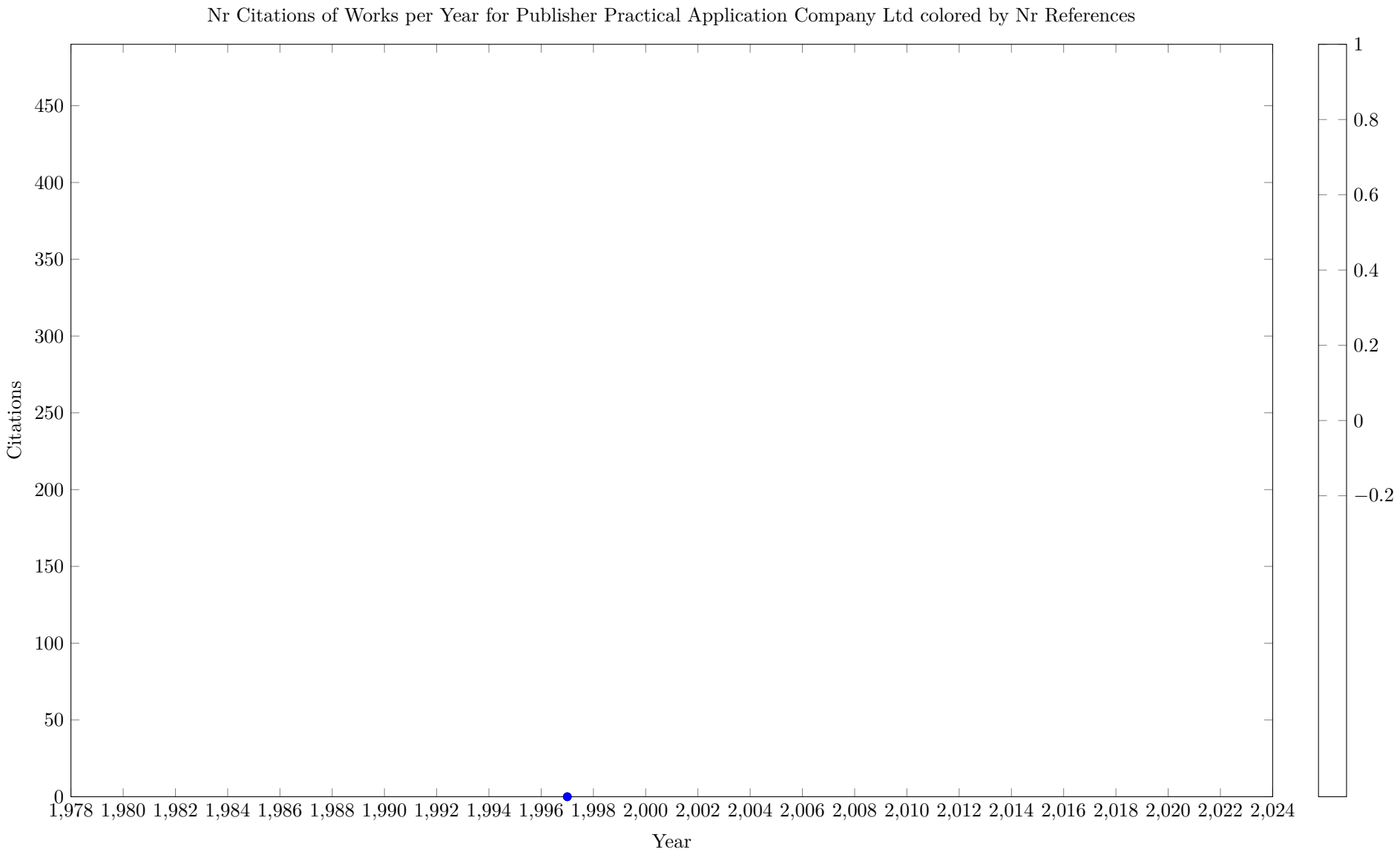
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