Publication Report

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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.

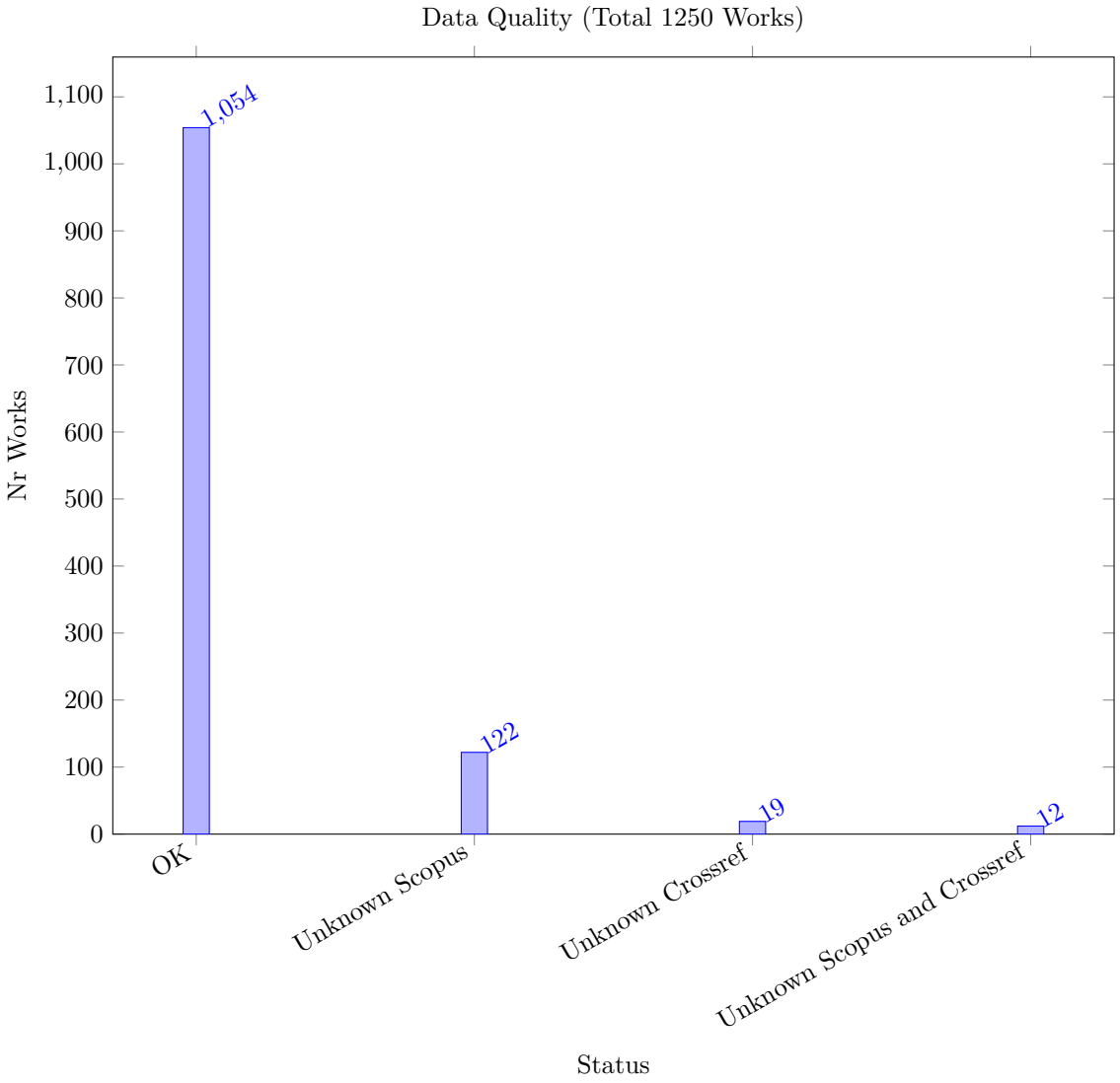

Data Quality (Total 1250 Works)
Nr Works
1,100
1,000
900
800
700
600
500
400
300
200
100
0
1,054
122
19
12
OK
Unknown Scopus
Unknown Crossref
Unknown Scopus and Crossref
Status

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
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

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

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

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

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

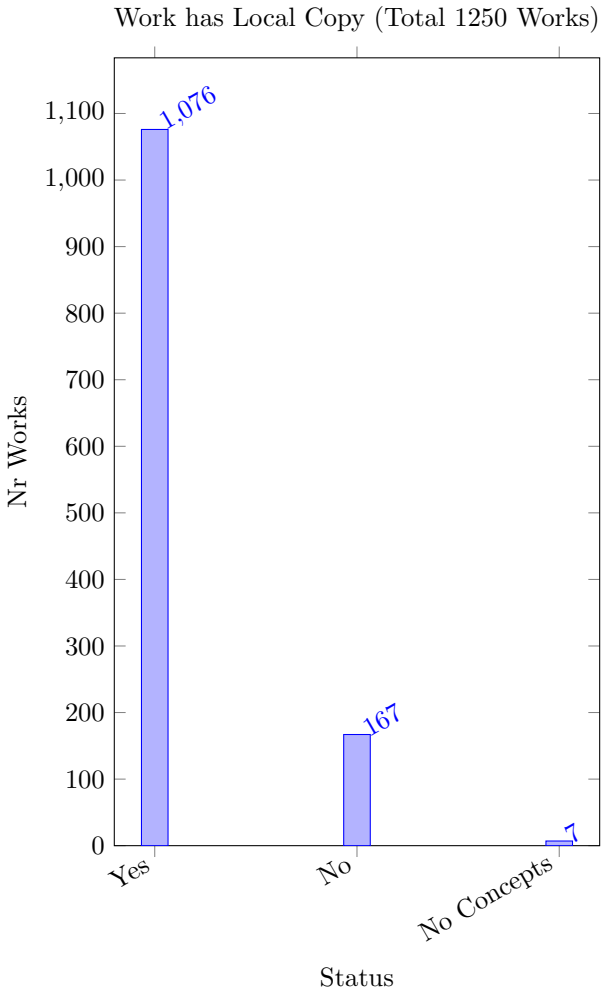
Table 5: Works with WoS Citation Counts

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

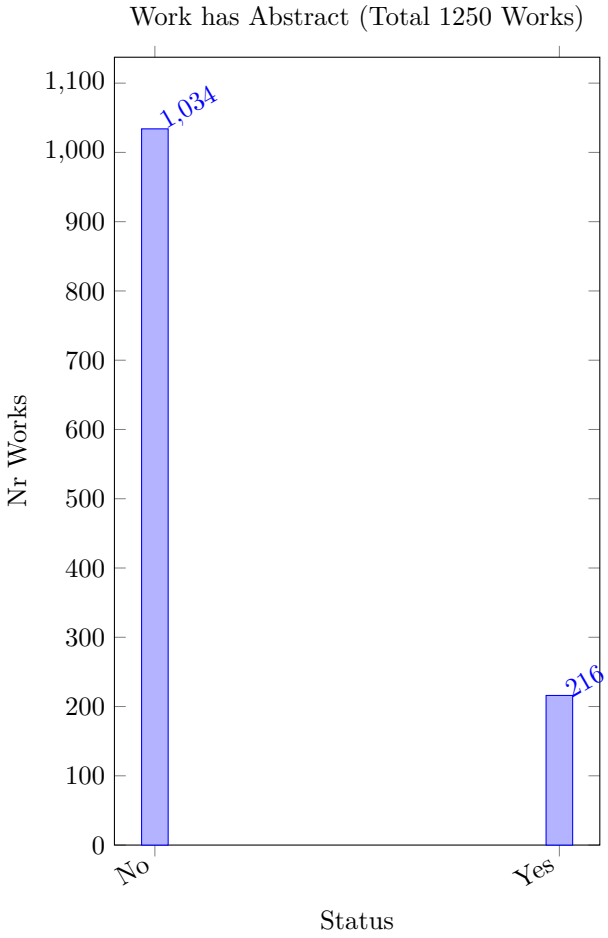
Key	DOI	Source Group	Year	Nr Citations	Crossref Citations	Scopus Citations	WoS Citations	Range Citations	Range Percentage
Trick03	10.1007/978-3-540-45157-0_4	OtherConf	2003	22	24	39	34	17	43.59
RasmussenT06	10.1007/11757375_15	CPAIOR	2006	10	12	19	11	9	47.37
FelizariAL09	10.1016/s1570-7946(05)80013-6	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 1250 Works)
Nr Works
1,100
1,000
900
800
700
600
500
400
300
200
100
0
1,076
167
7
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

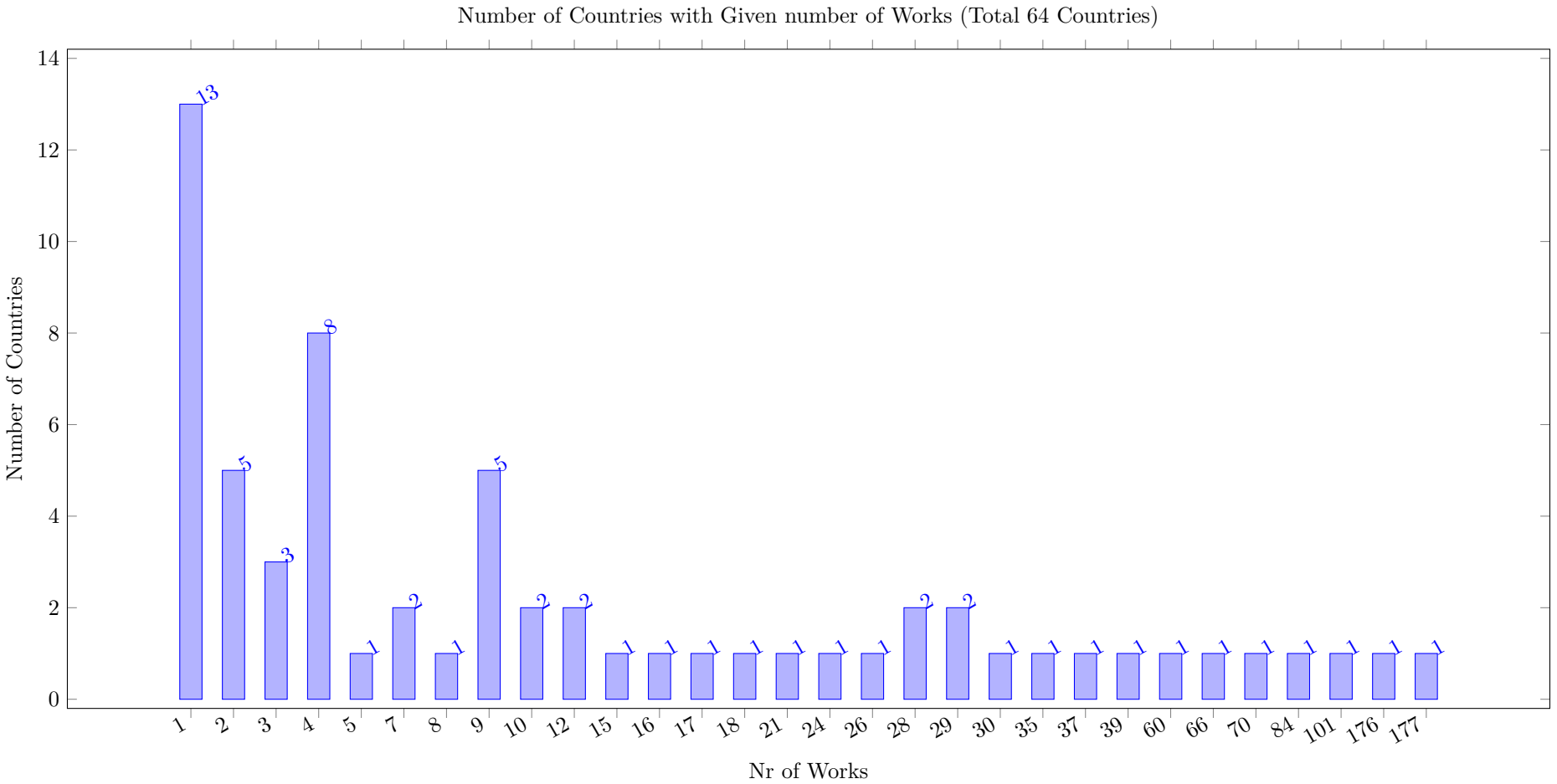
Key	File

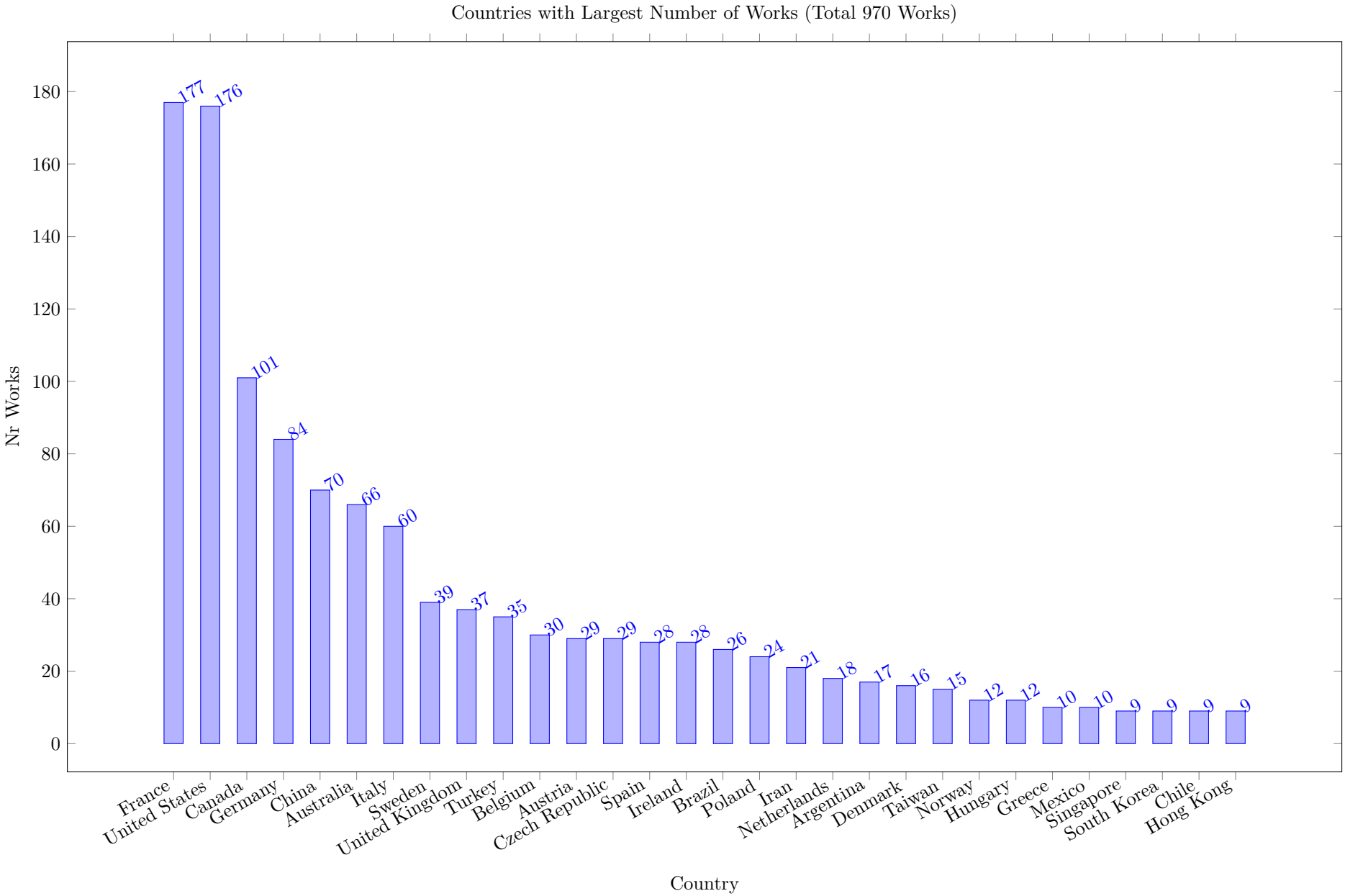
2.5 Missing Publisher

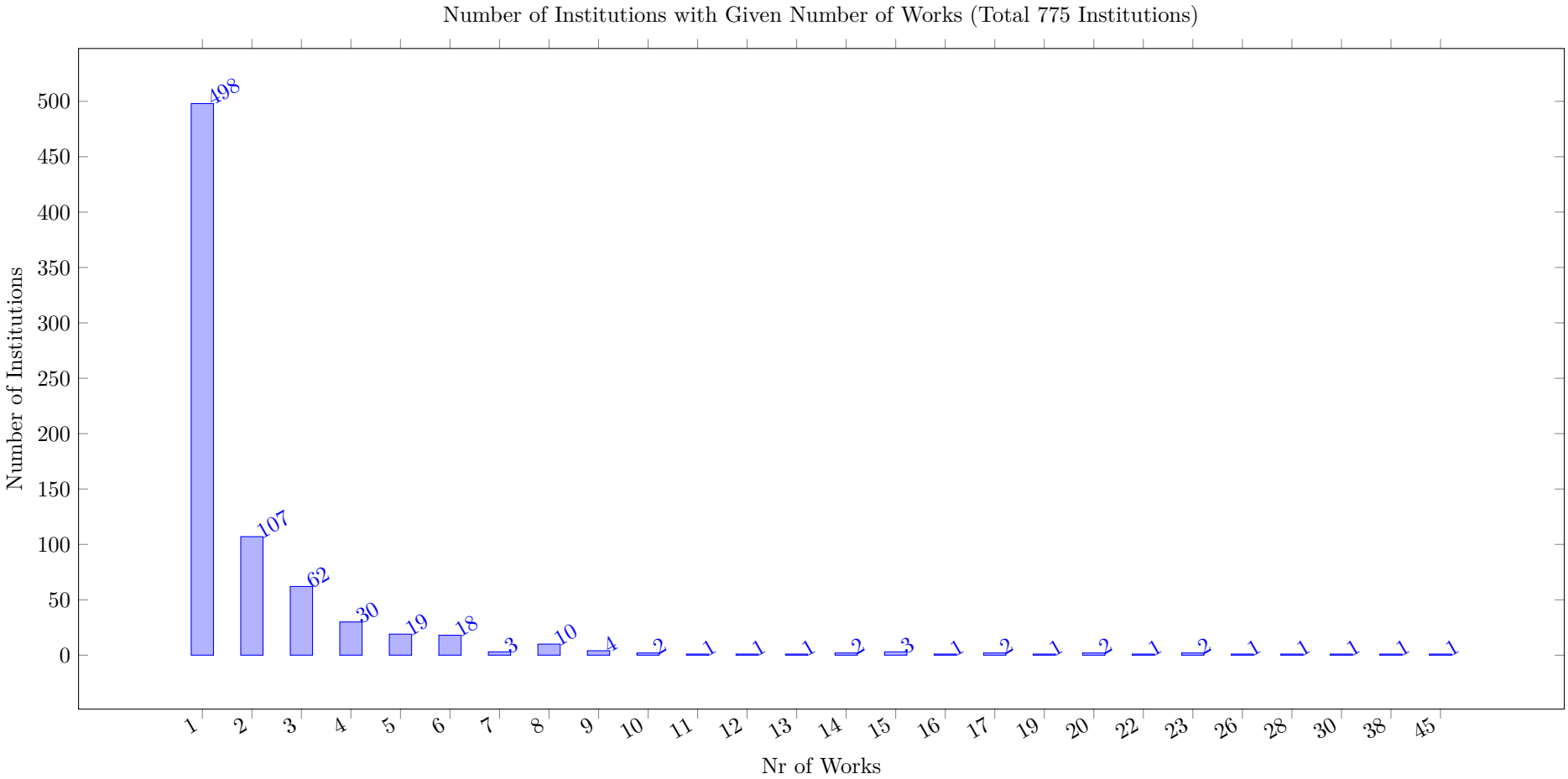
Table 7: Missing Publisher

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

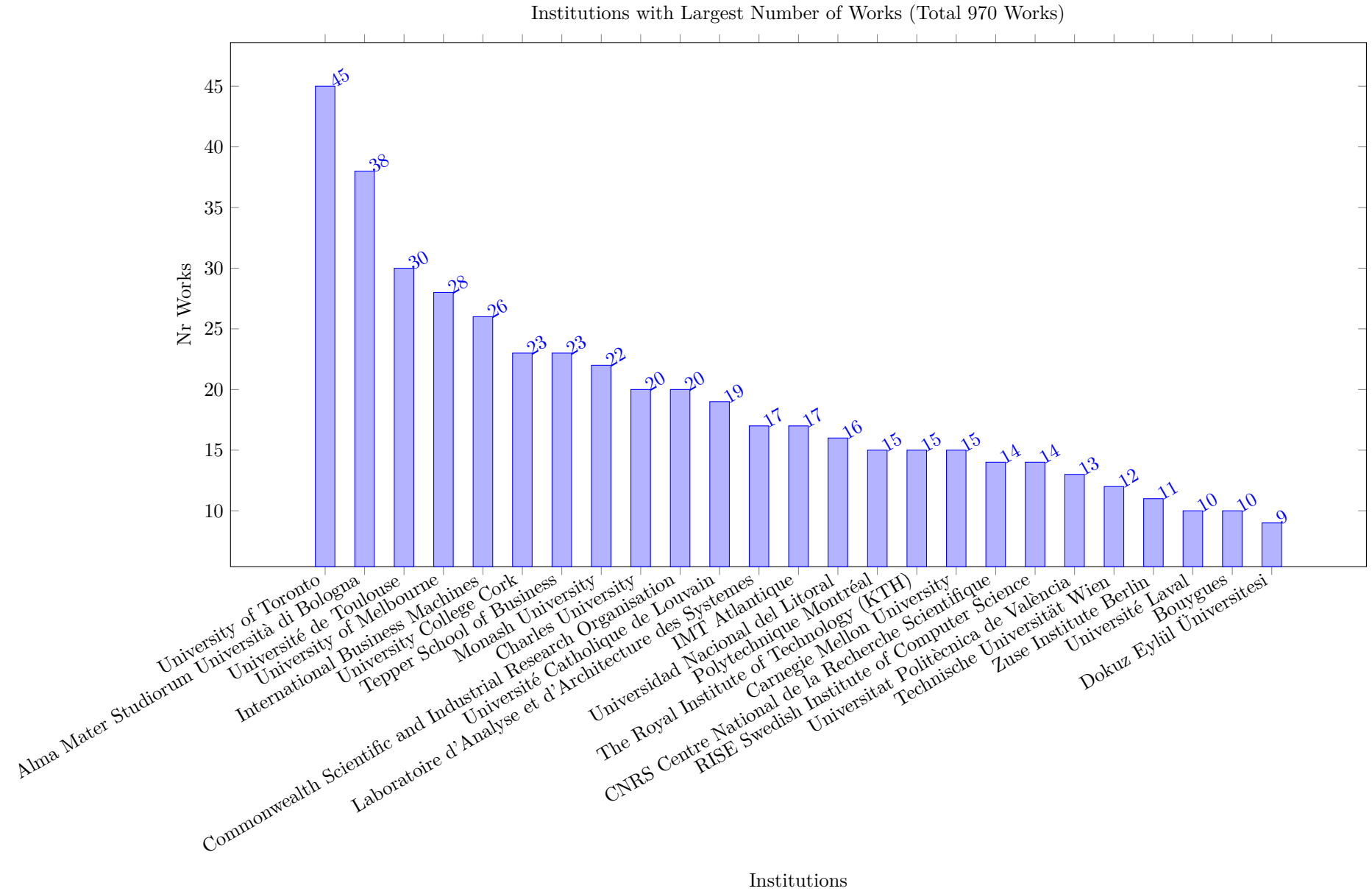
3 Works by Location


Number of Countries with Given number of Works (Total 64 Countries)
Number of Countries
0
2
4
6
8
10
12
14
13
5
3
8
1
2
1
5
2
2
1
1
1
1
1
1
1
2
2
1
1
1
1
1
1
1


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

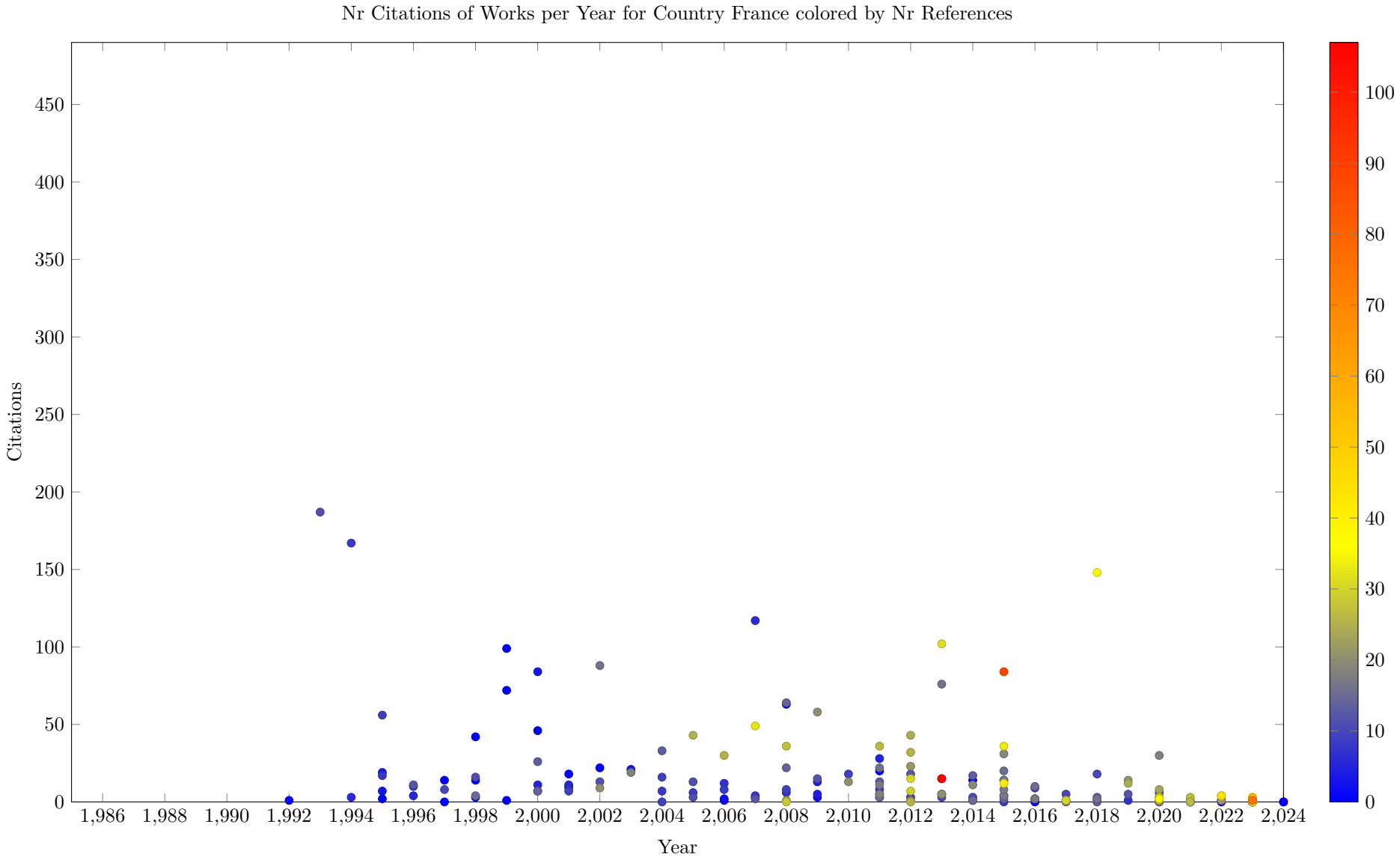


The next plot shows the number of papers associated to institutions, as stated in the Scopus affiliation. A work is counted, if at least one of the affiliations is from a given institution. Due to the format of the Scopus data, we cannot fractionally assign a paper based on the author affiliations, each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

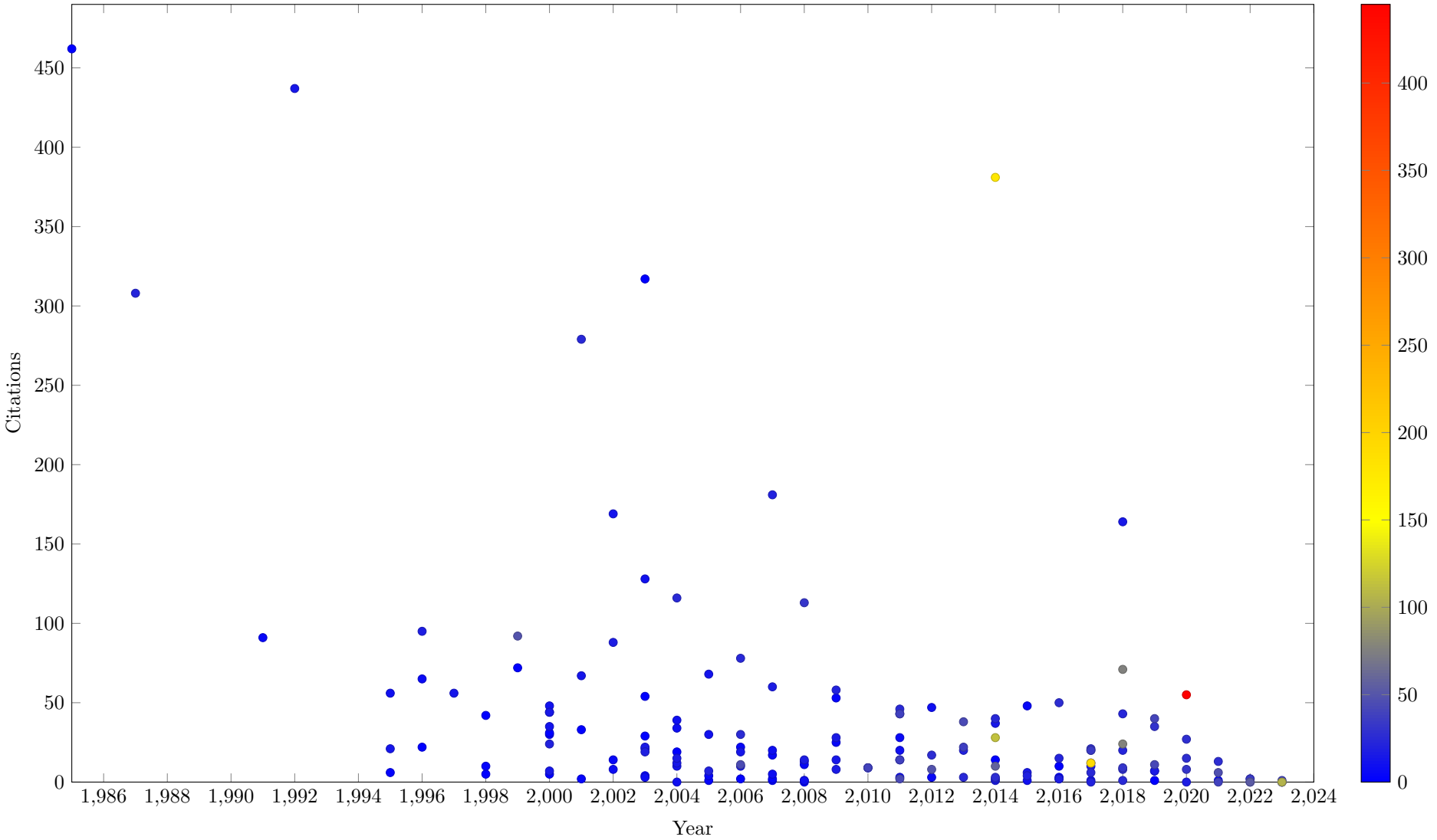

Institutions with Largest Number of Works (Total 970 Works)
Nr Works
Institutions
45
38
30
28
26
23
23
22
20
20
19
17
17
16
15
15
15
14
14
13
12
11
10
10
9
University of Toronto
Alma Mater Studiorum Università di Bologna
Université de Toulouse
University of Melbourne
International Business Machines
University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

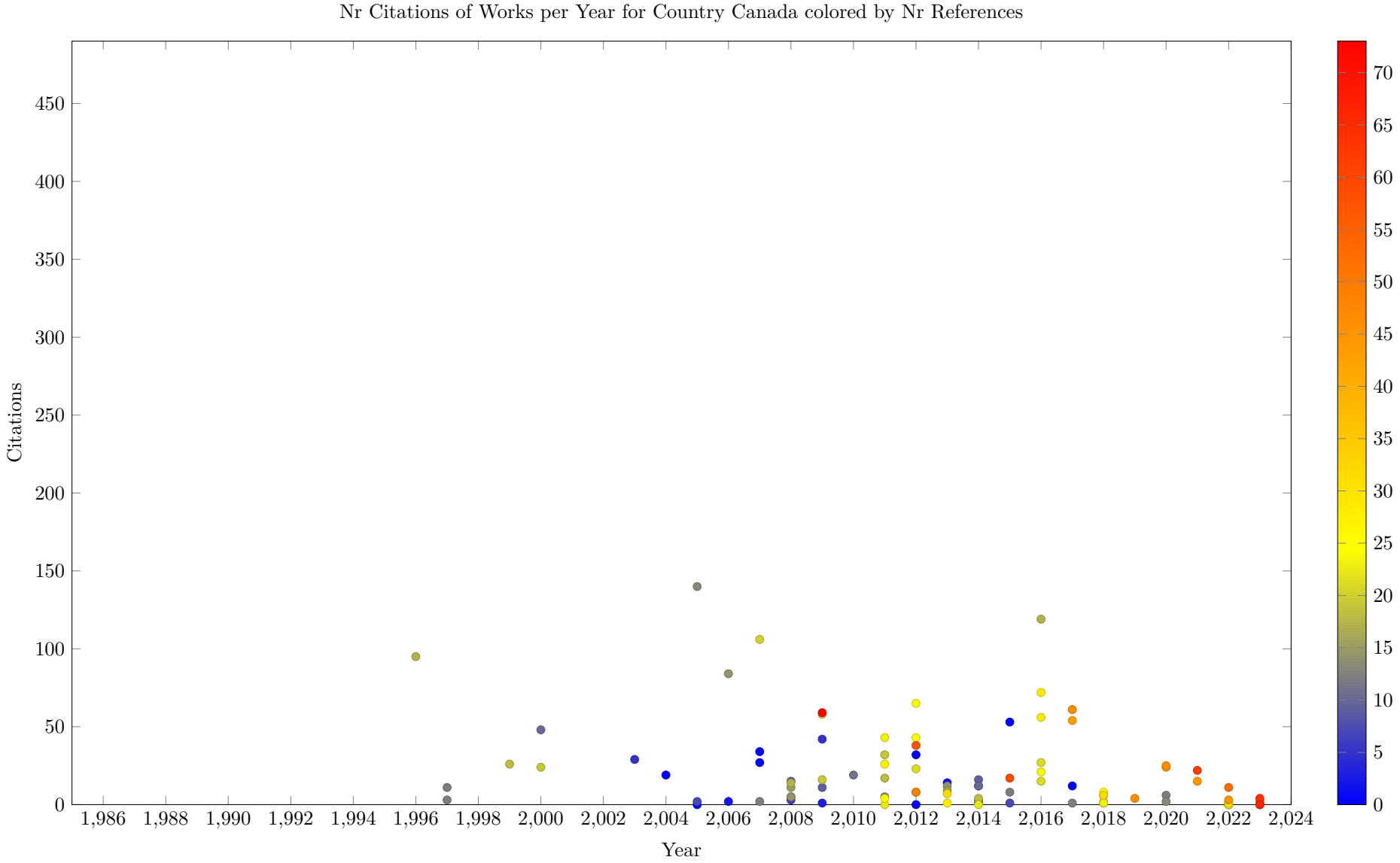
The following plots show for the top 30 countries when the works included were published, and how many citations (OpenCitation count) each paper had. The scatter plots are colored by the number of references (OpenCitation count), this help to identify surveys more easily. The plot gives an indication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

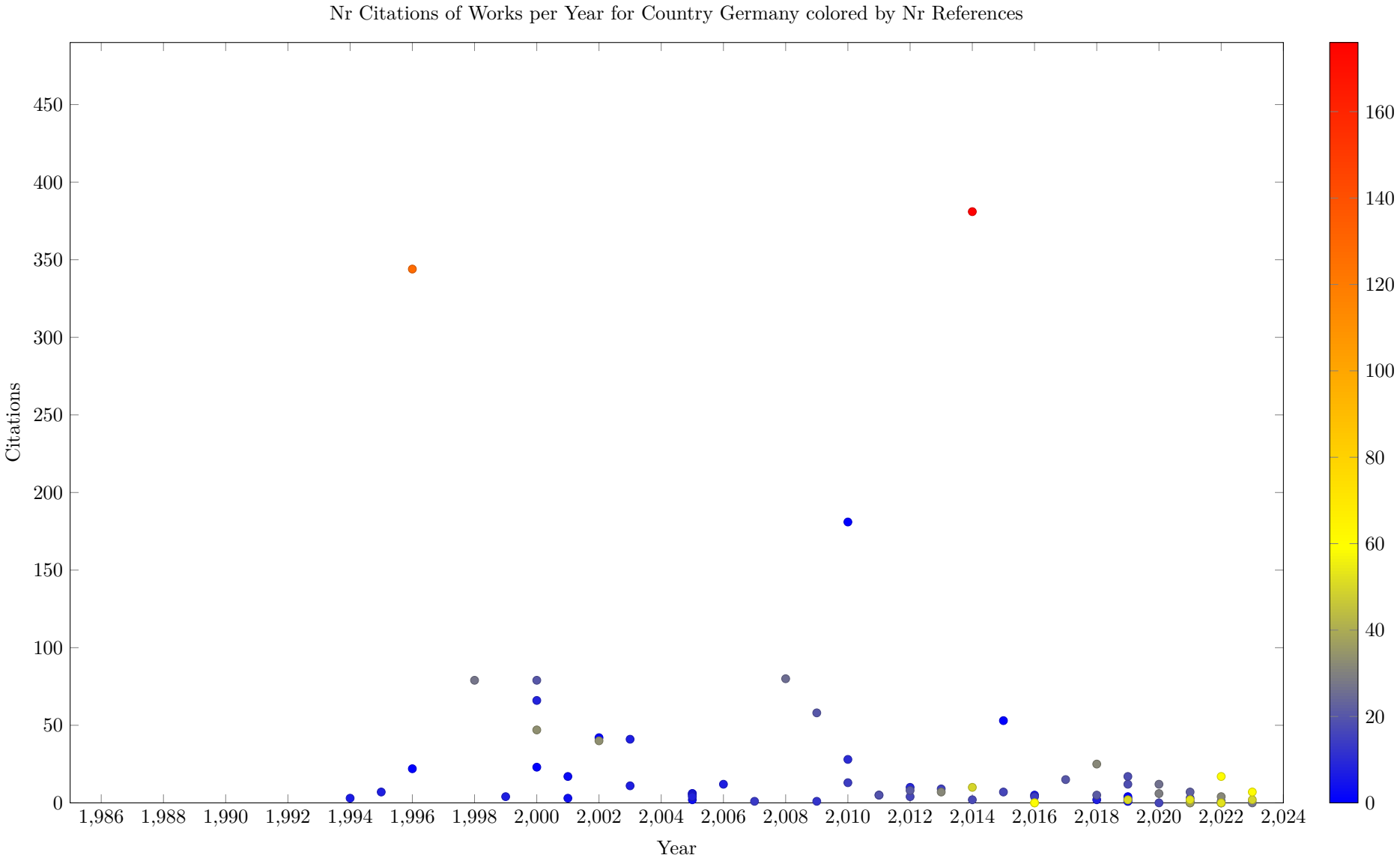
It would be nice to have tooltips on the plots, so identify specific works in the plots. This is currently not supported by the framework library used.


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




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
2,012
2,014
2,016
2,018
2,020
2,022
2,024
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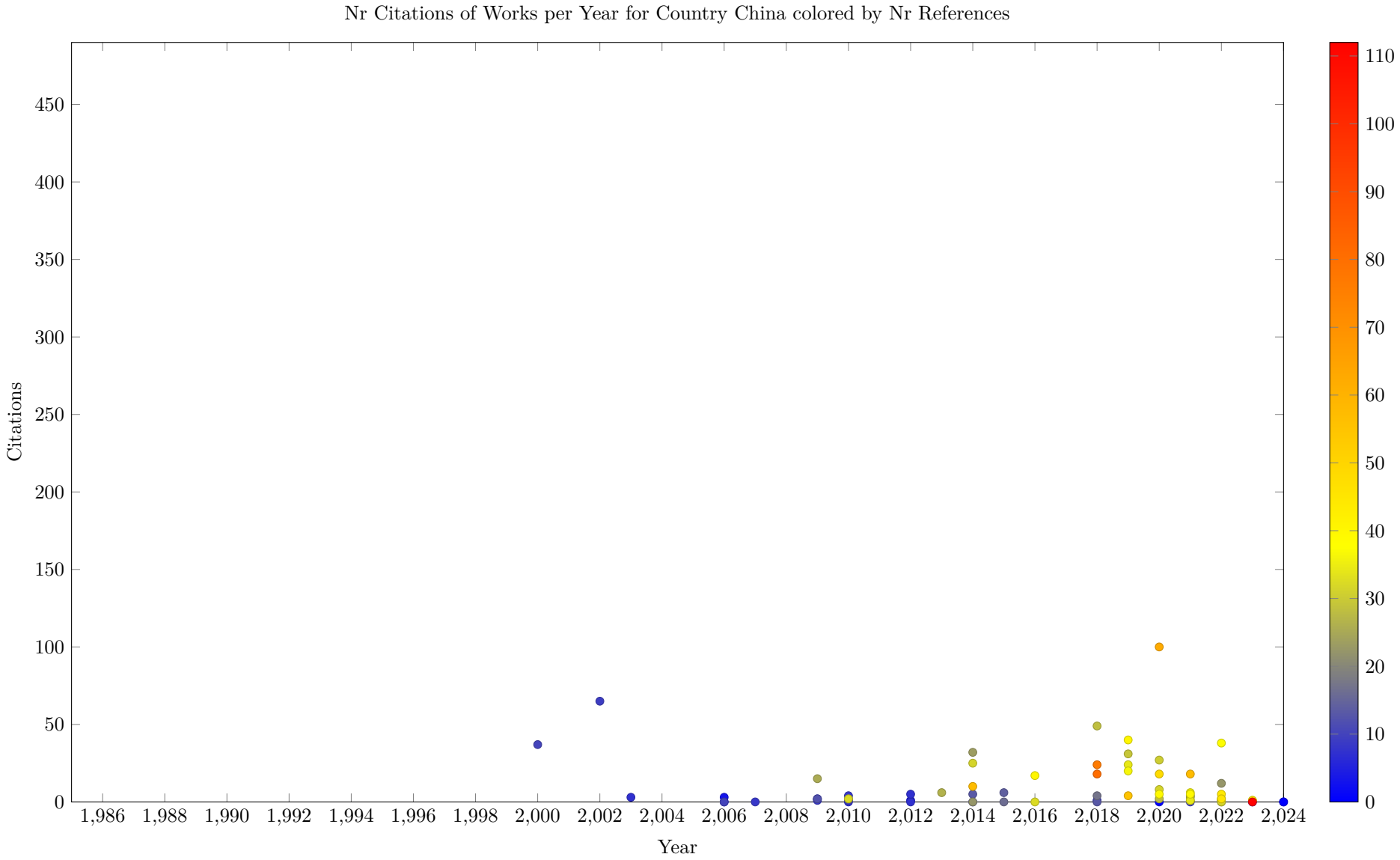
20
40
60
80
100
120
140
160


Nr Citations of Works per Year for Country China colored by Nr References
Citations
0
50
100
150
200
250
300
350
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
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2,020
2,022
2,024
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10
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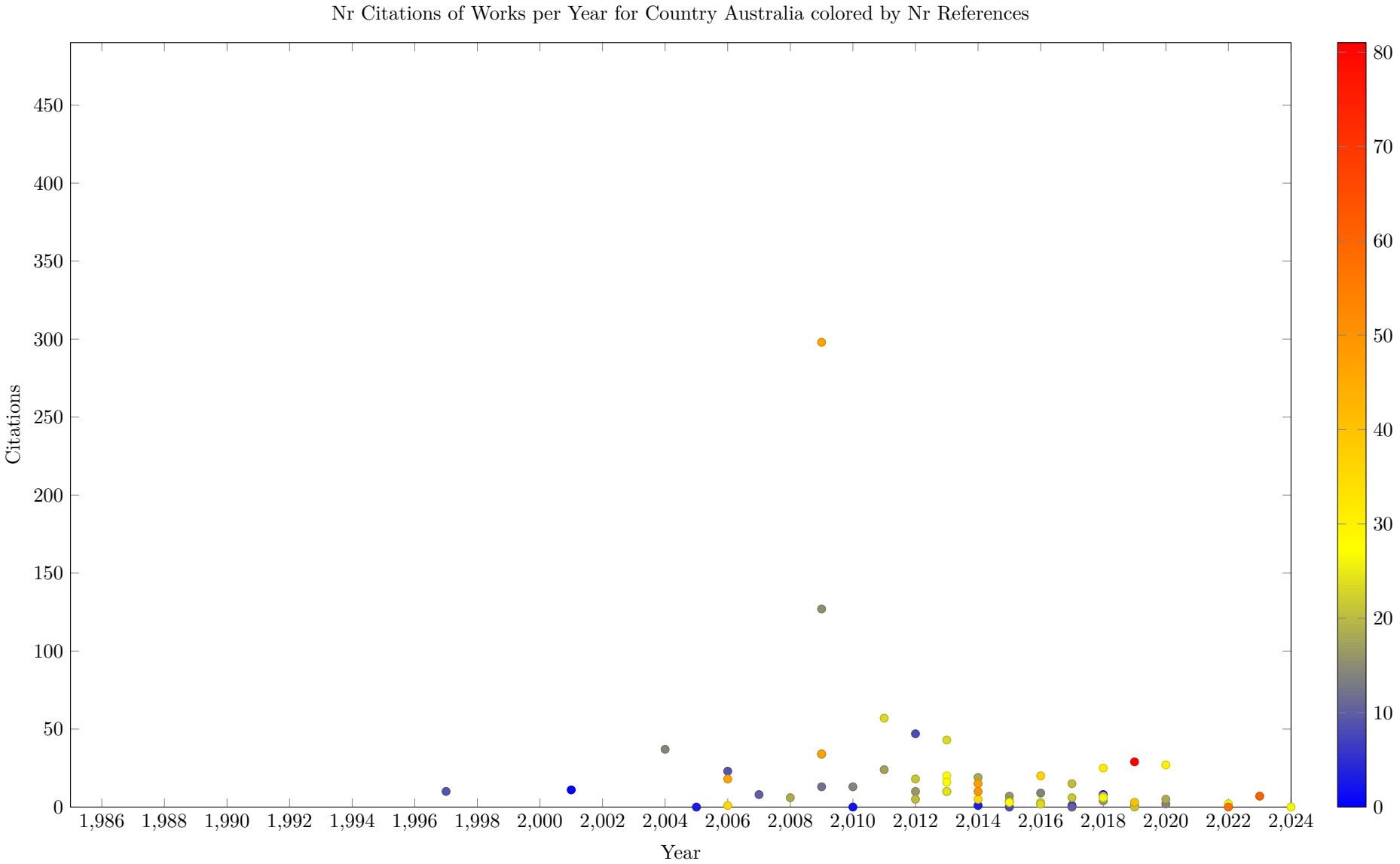
40
50
60
70
80
90
100
110


Nr Citations of Works per Year for Country Australia colored by Nr References
Citations
0
50
100
150
200
250
300
350
400
450
Year
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
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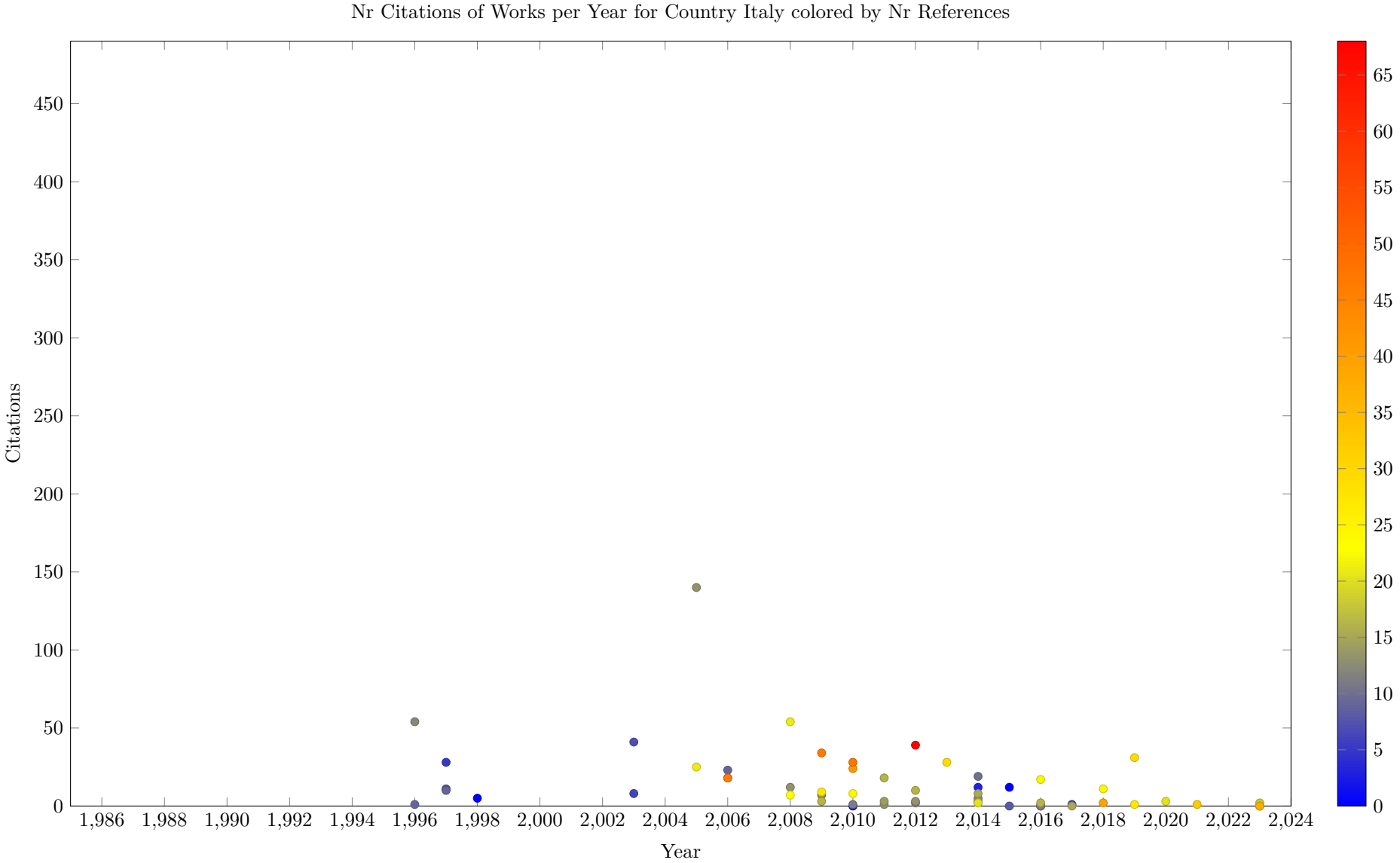
2,024
0
10
20
30
40
50
60
70
80


Nr Citations of Works per Year for Country Italy colored by Nr References
Citations
0
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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
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30
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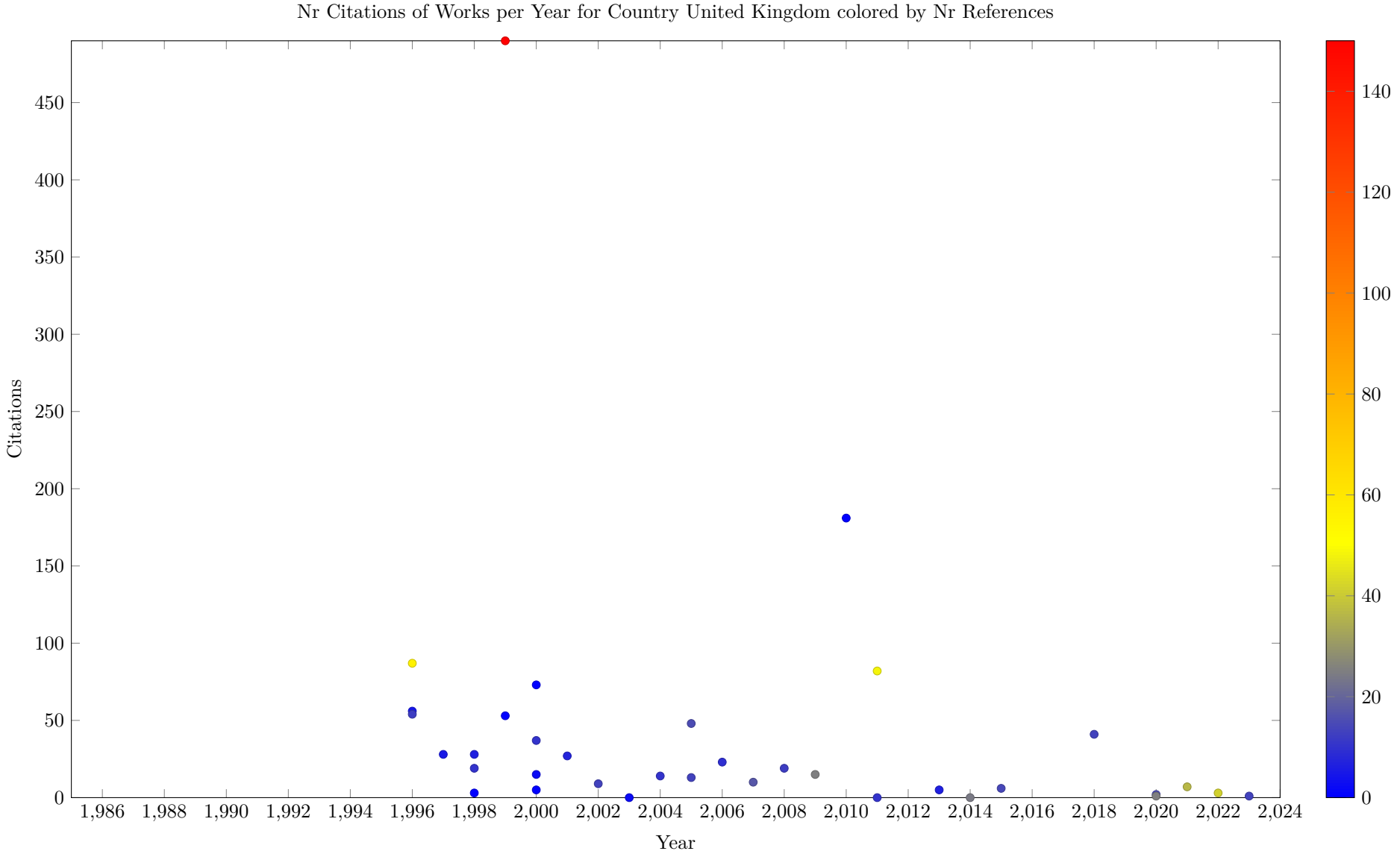
40
45
50
55
60
65


Nr Citations of Works per Year for Country United Kingdom colored by Nr References
Citations
0
50
100
150
200
250
300
350
400
450
Year
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1,988
1,990
1,992
1,994
1,996
1,998
2,000
2,002
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2,008
2,010
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2,020
2,022
2,024
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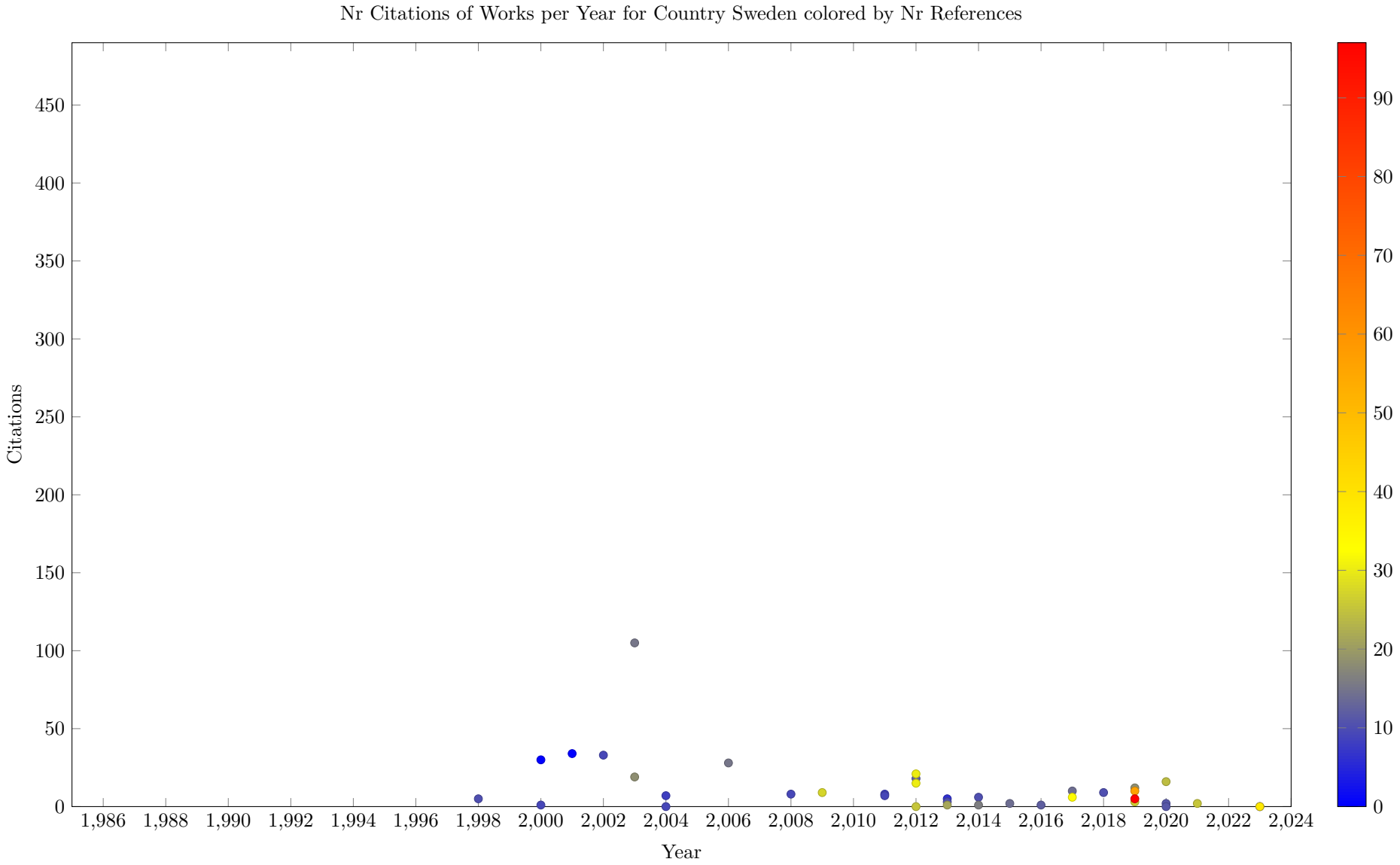
20
40
60
80
100
120
140


Nr Citations of Works per Year for Country Sweden colored by Nr References
Citations
0
50
100
150
200
250
300
350
400
450
Year
1,986
1,988
1,990
1,992
1,994
1,996
1,998
2,000
2,002
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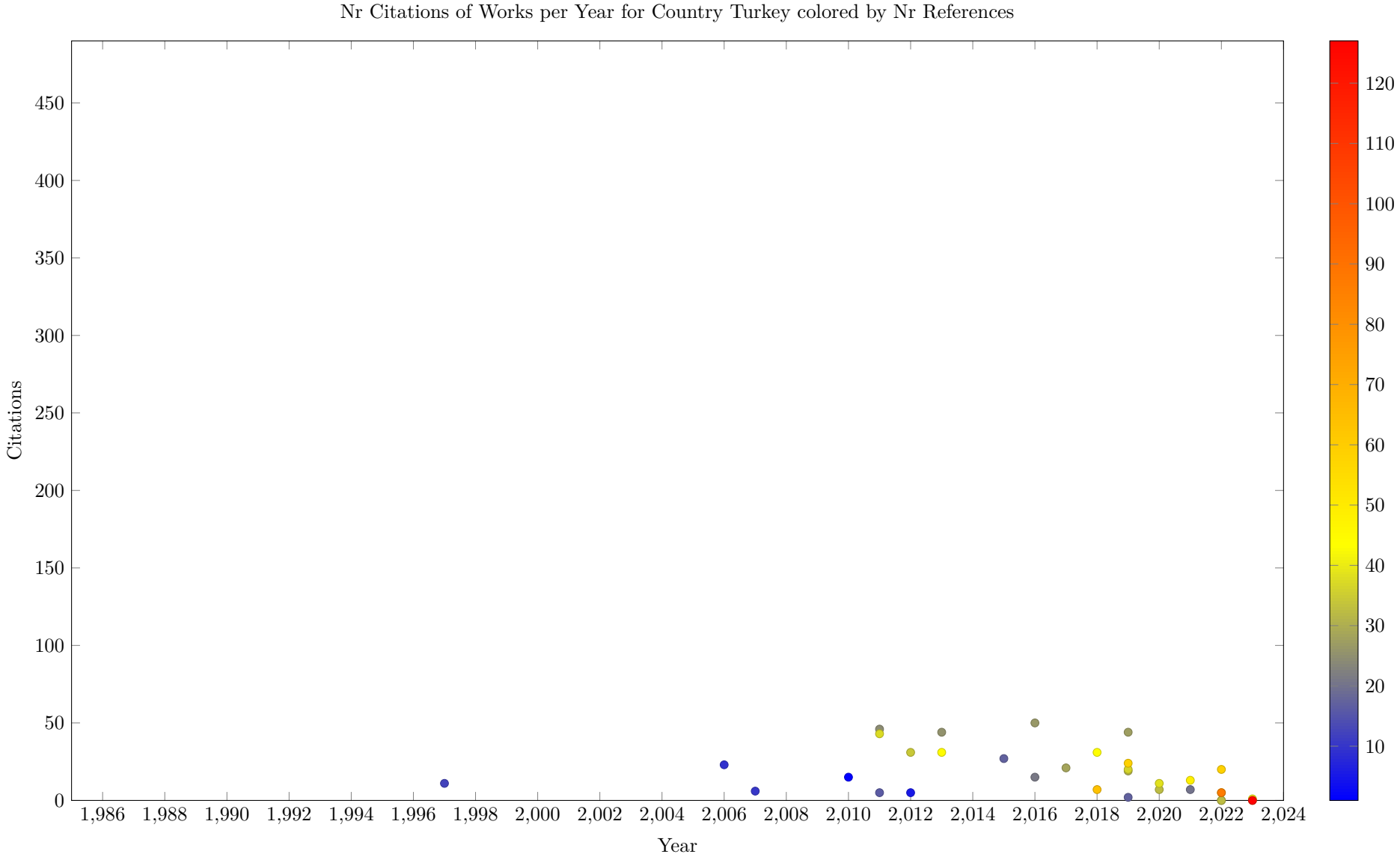
Nr Citations of Works per Year for Country Turkey colored by Nr References
Citations
0
50
100
150
200
250
300
350
400
450
Year
1,986
1,988
1,990
1,992
1,994
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2,000
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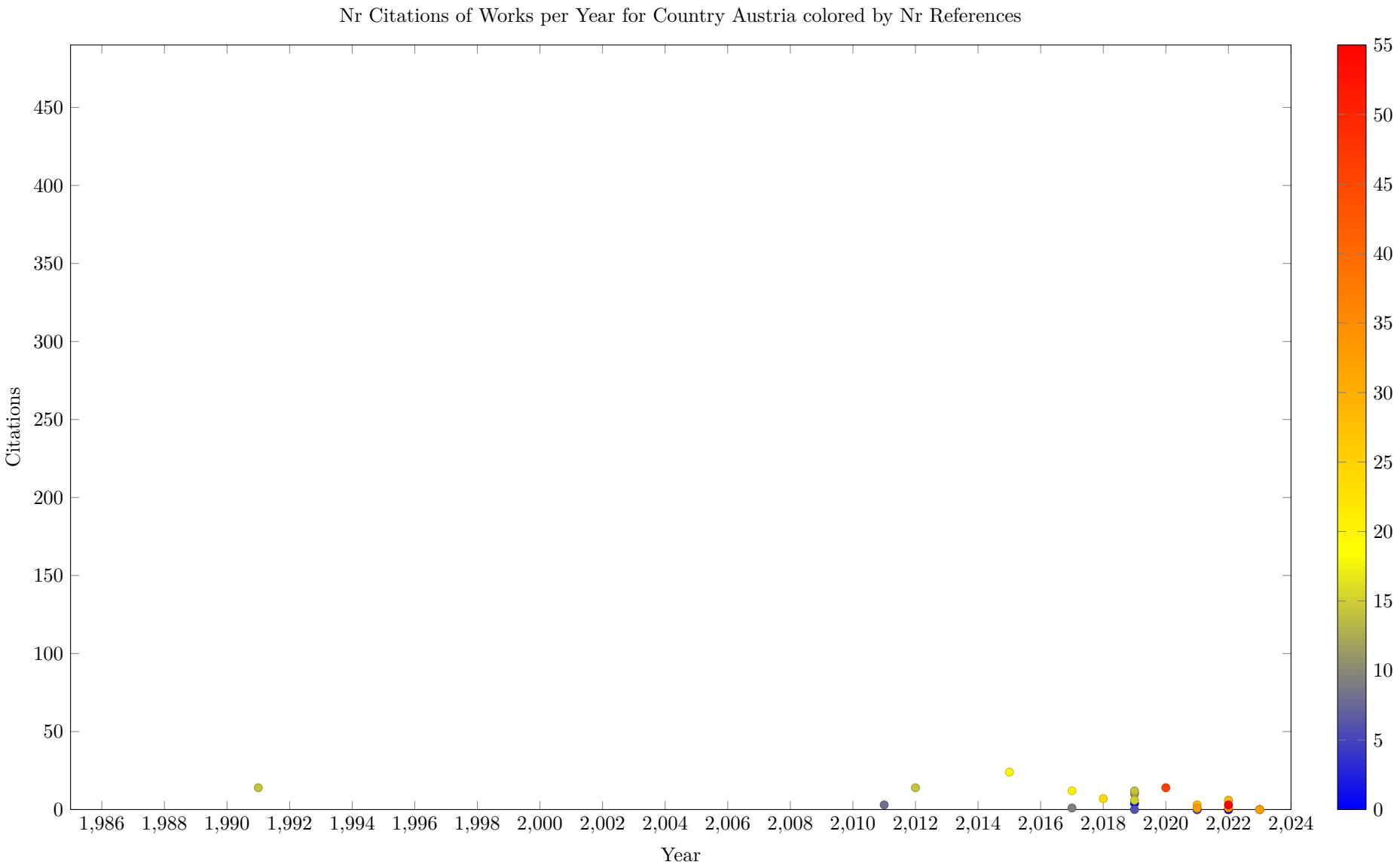
Nr Citations of Works per Year for Country Austria colored by Nr References
Citations
0
50
100
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350
400
450
Year
1,986
1,988
1,990
1,992
1,994
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2,000
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2,020
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2,024
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20
25
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35
40
45
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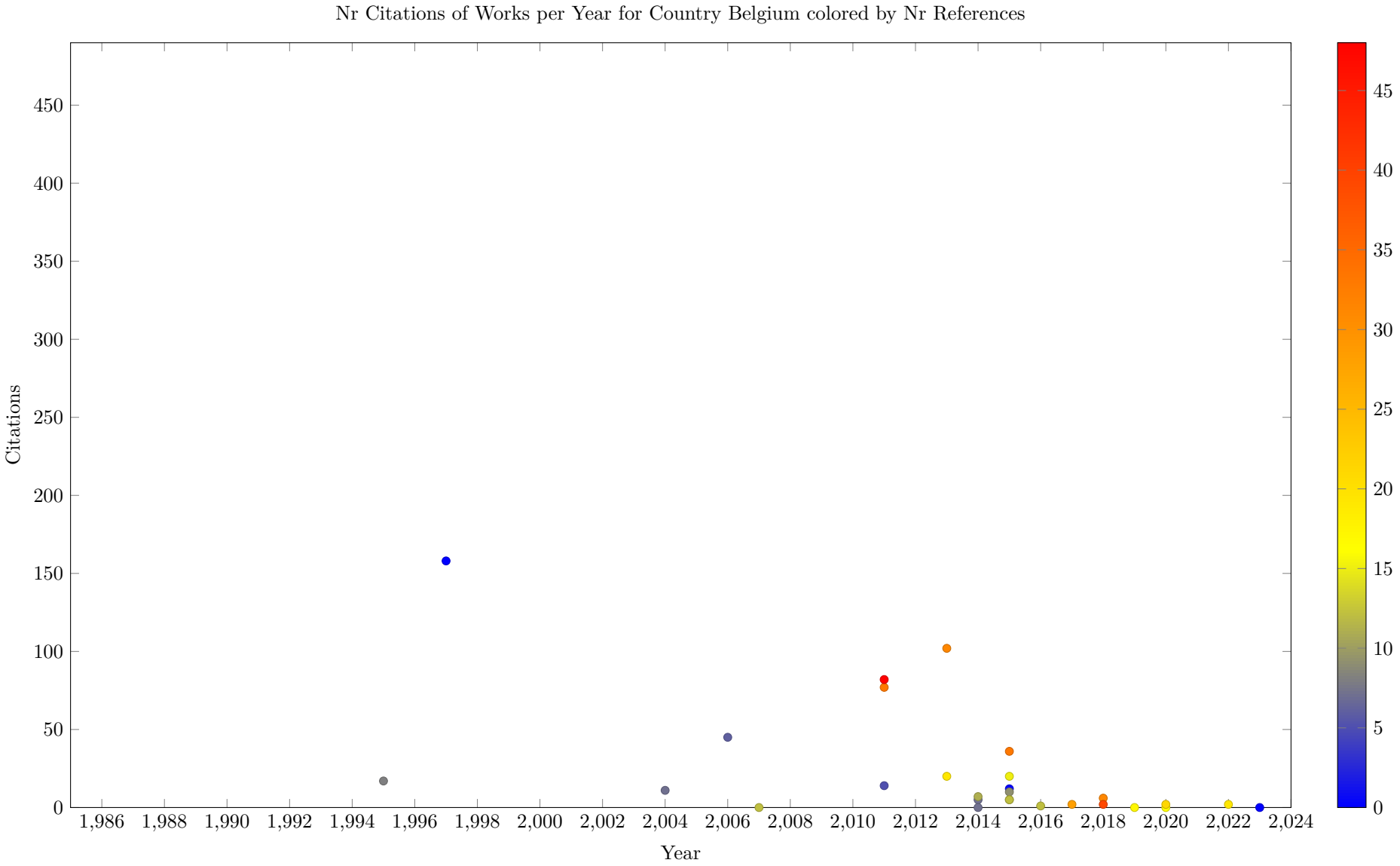
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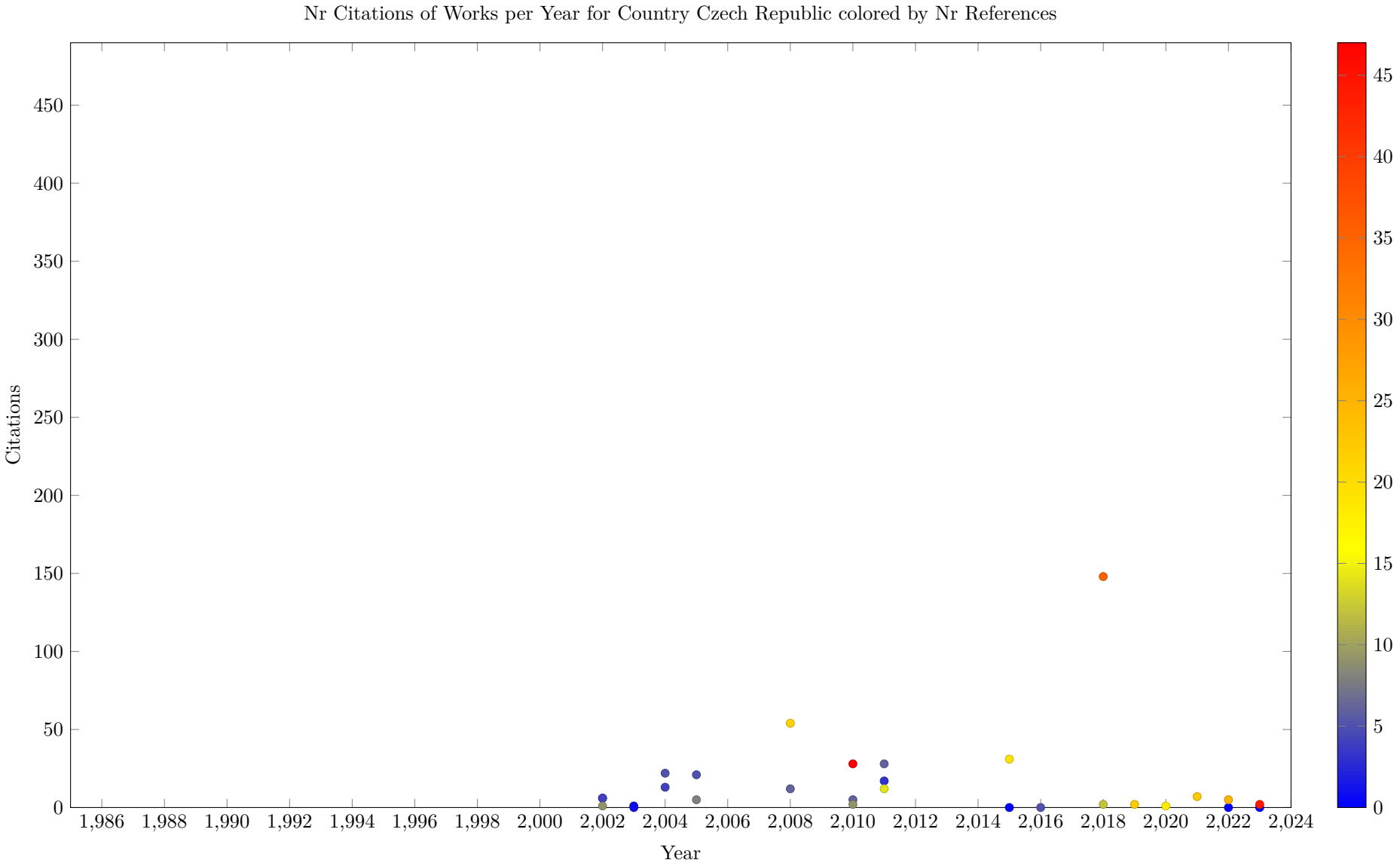
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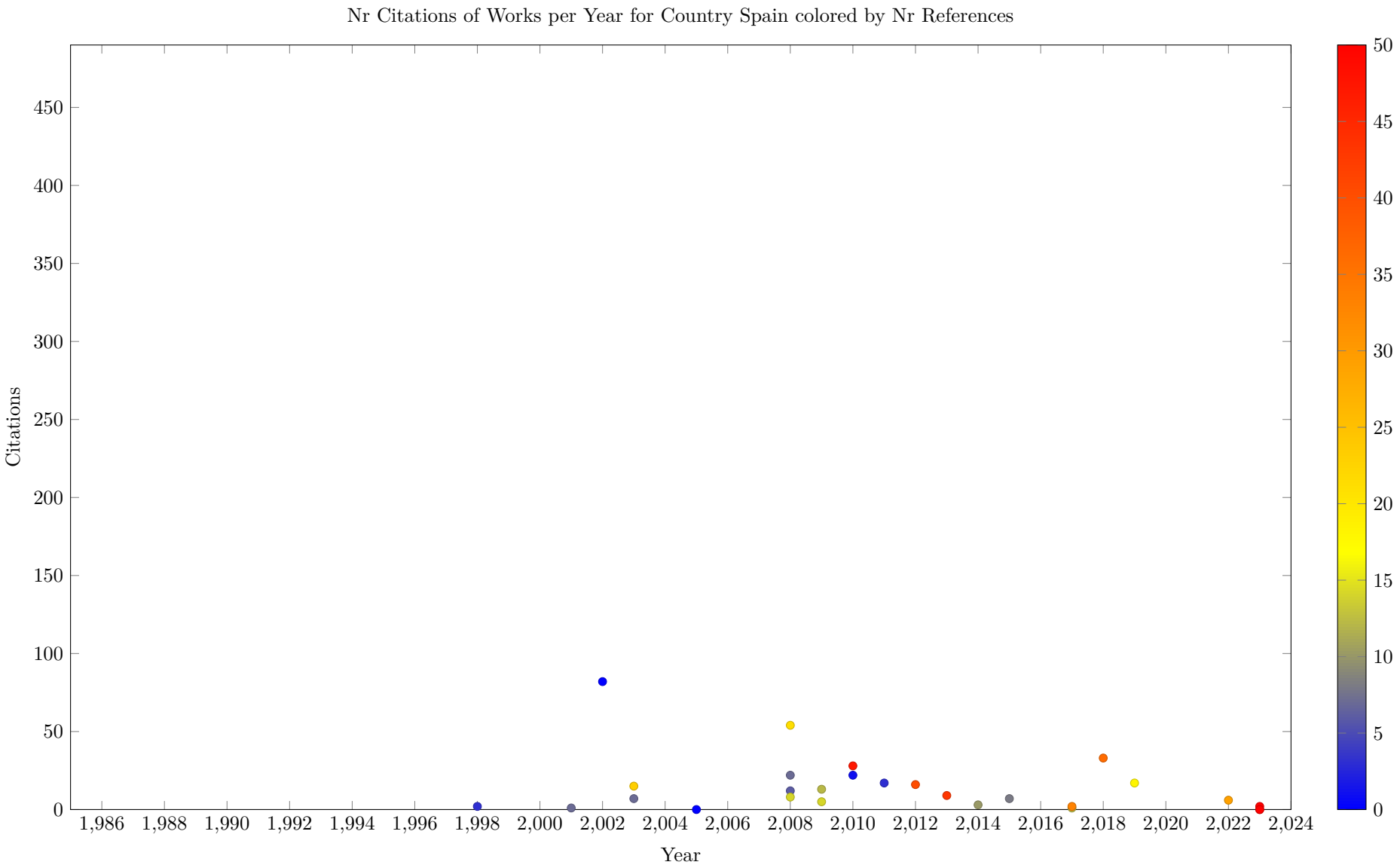
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Nr Citations of Works per Year for Country Ireland colored by Nr References
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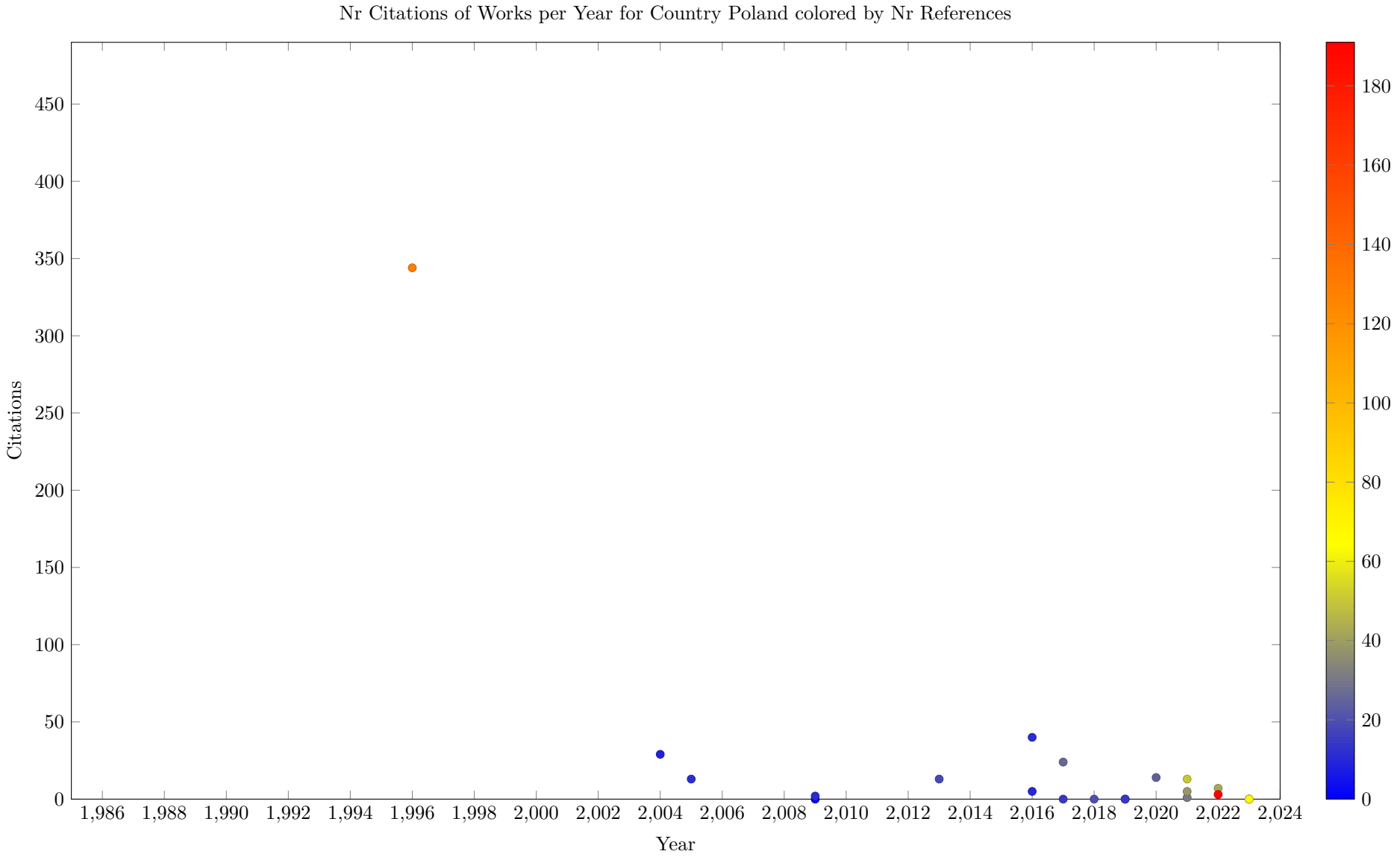
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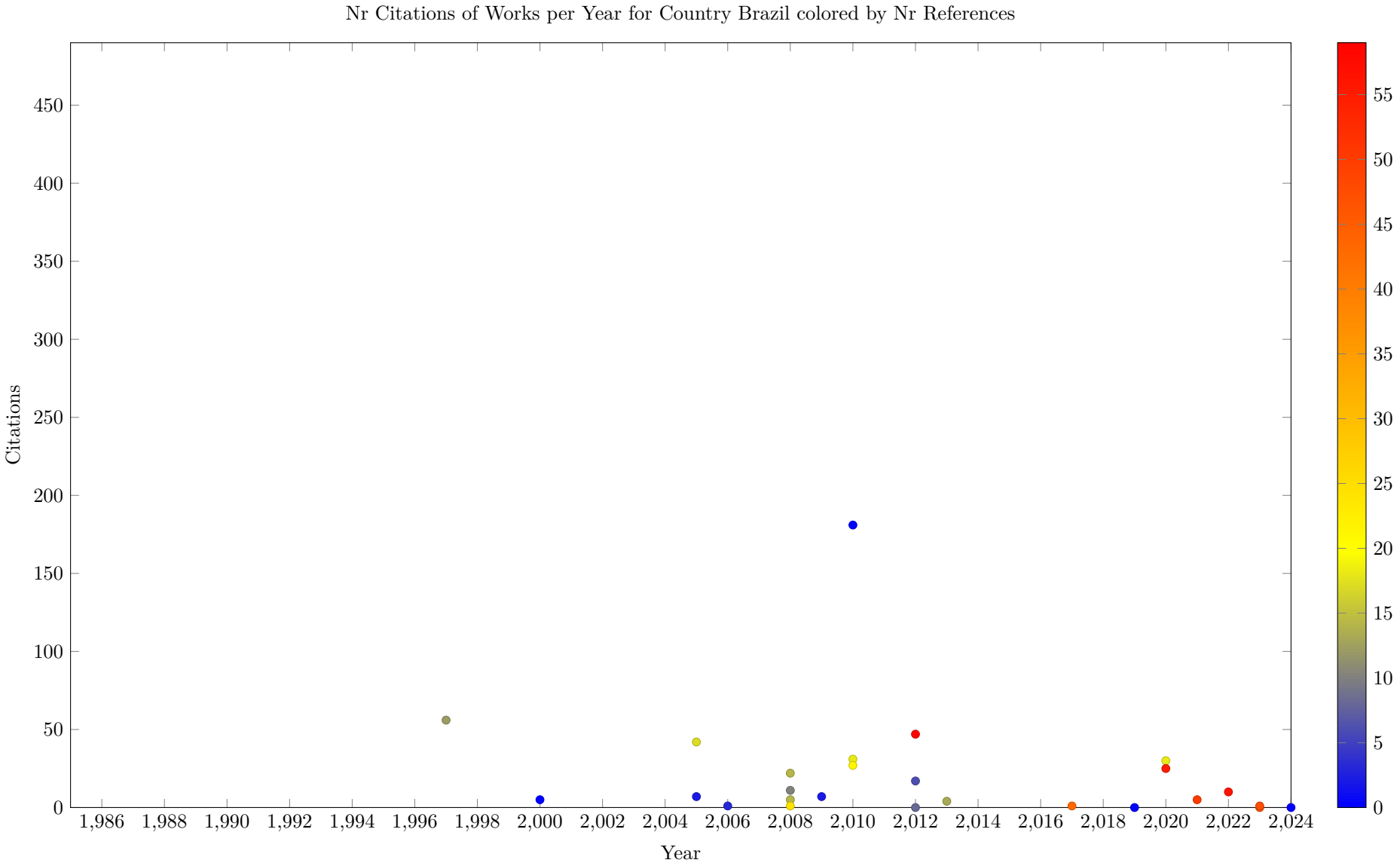
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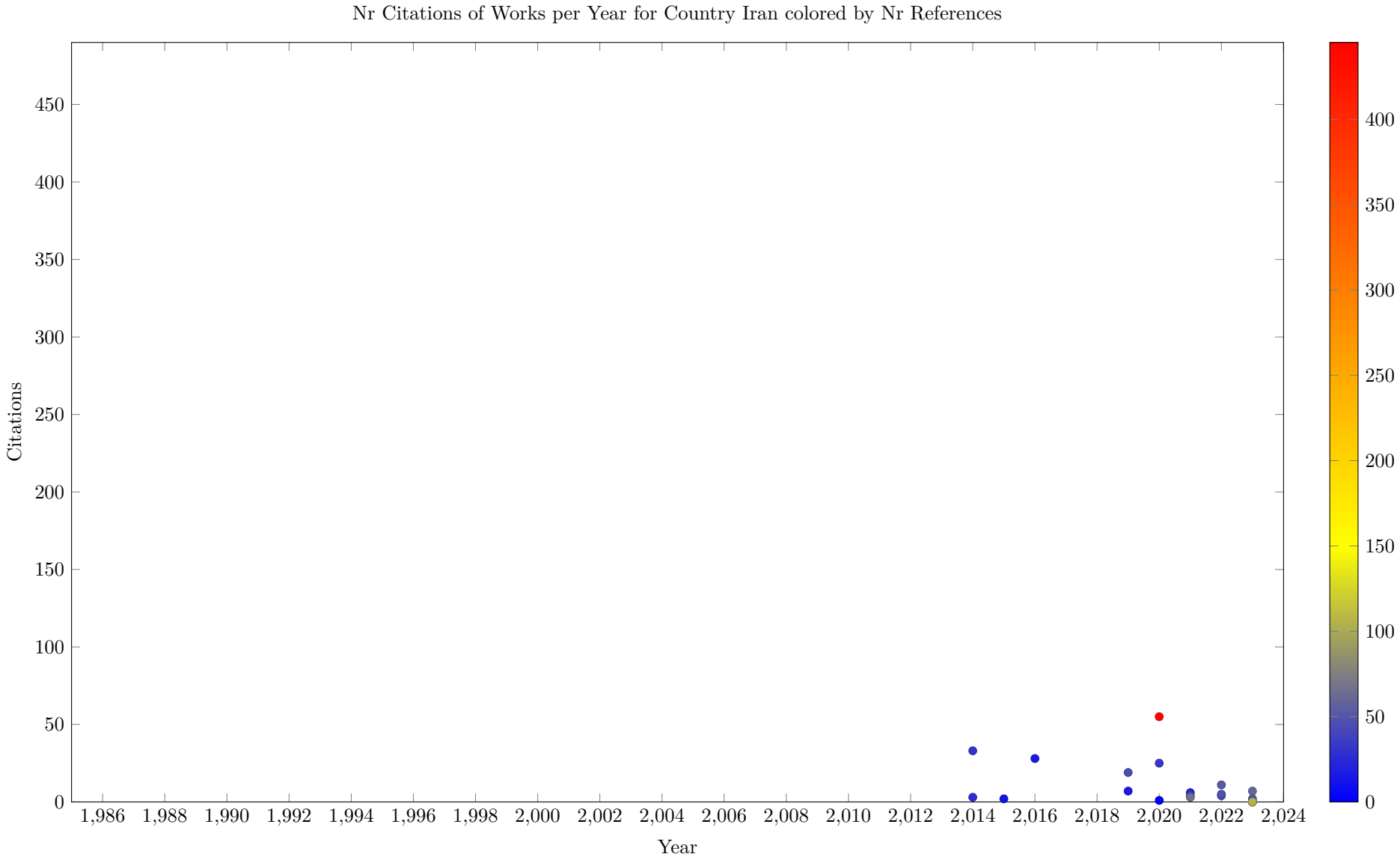
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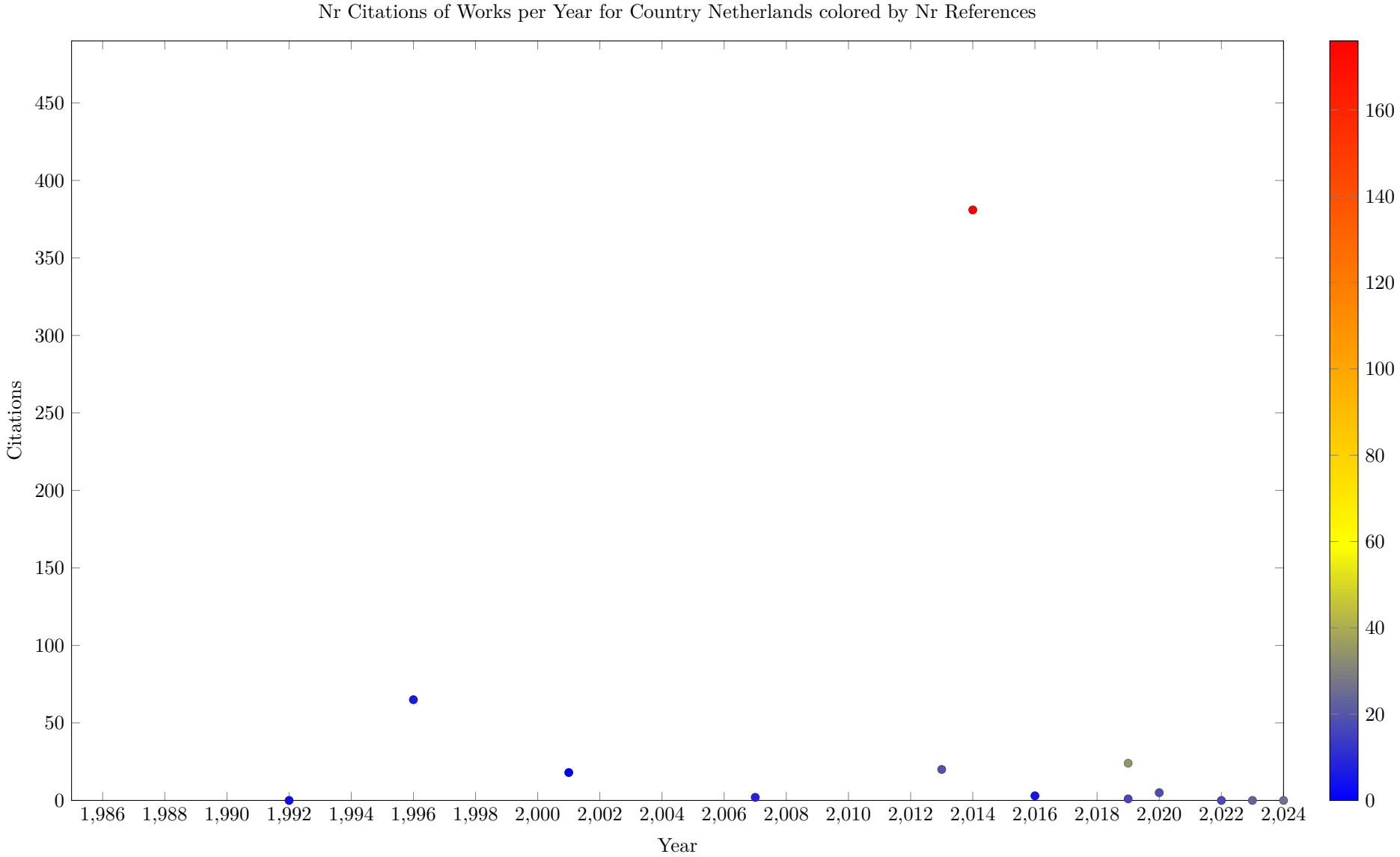
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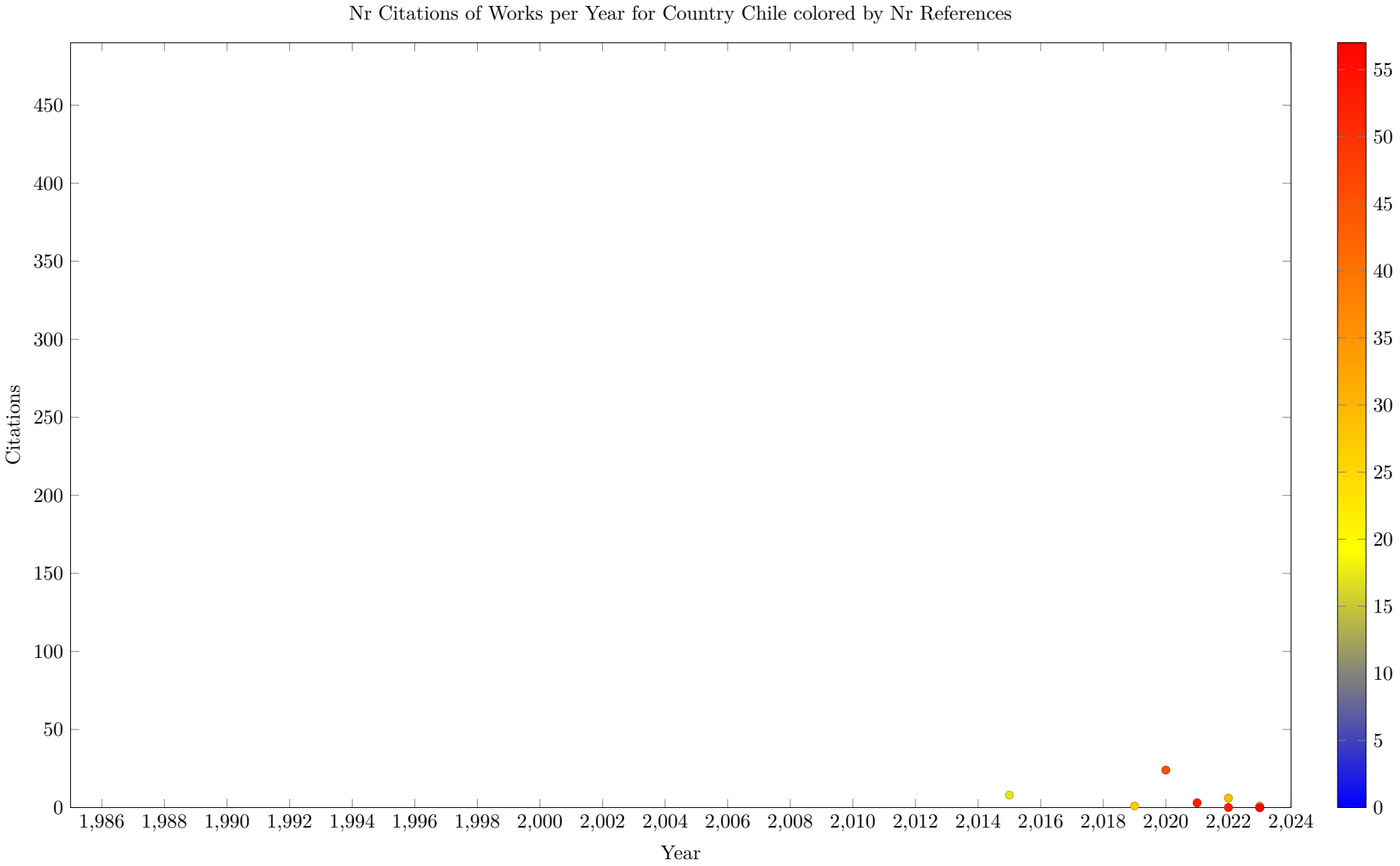
Nr Citations of Works per Year for Country Chile colored by Nr References
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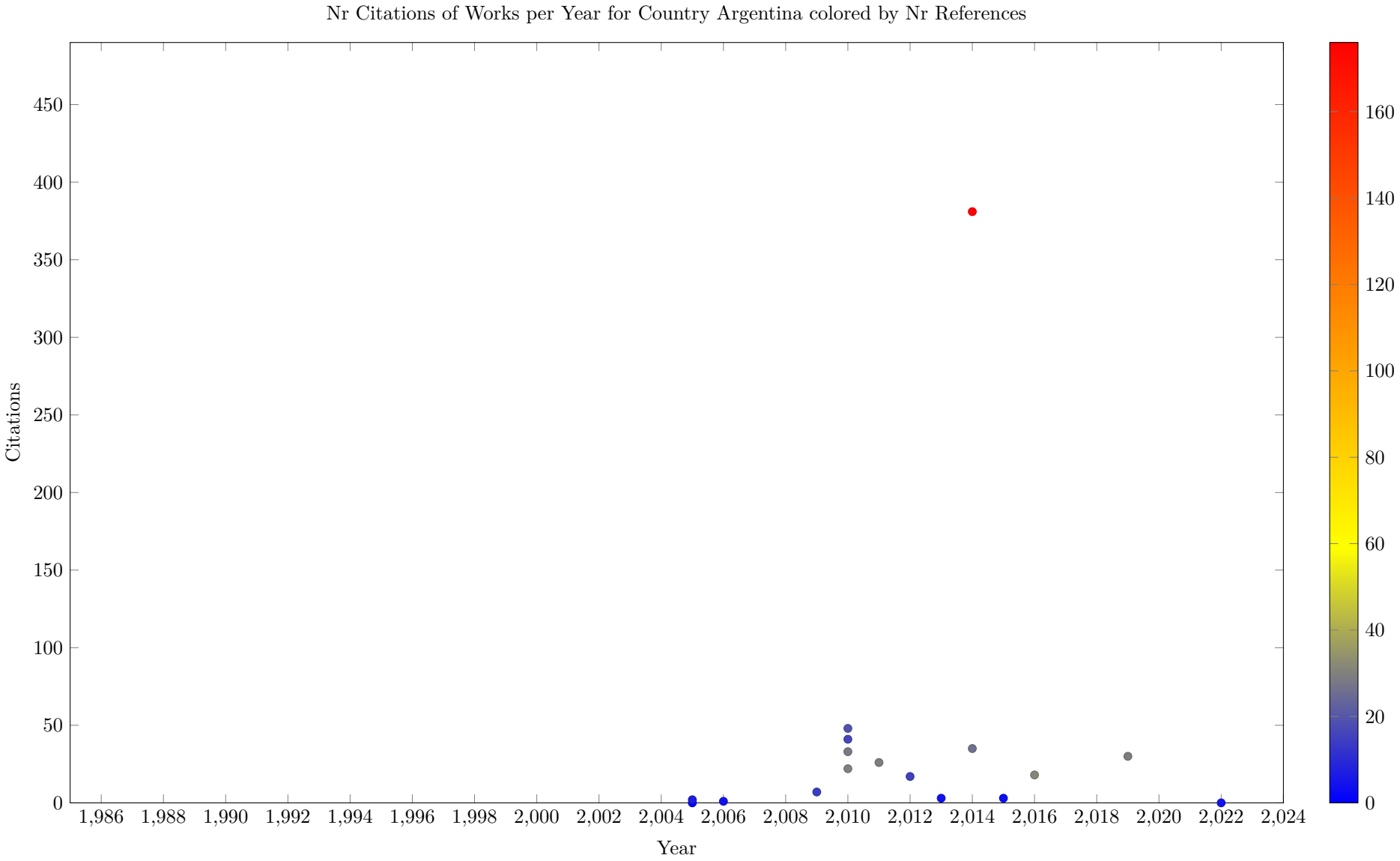
Nr Citations of Works per Year for Country Argentina colored by Nr References
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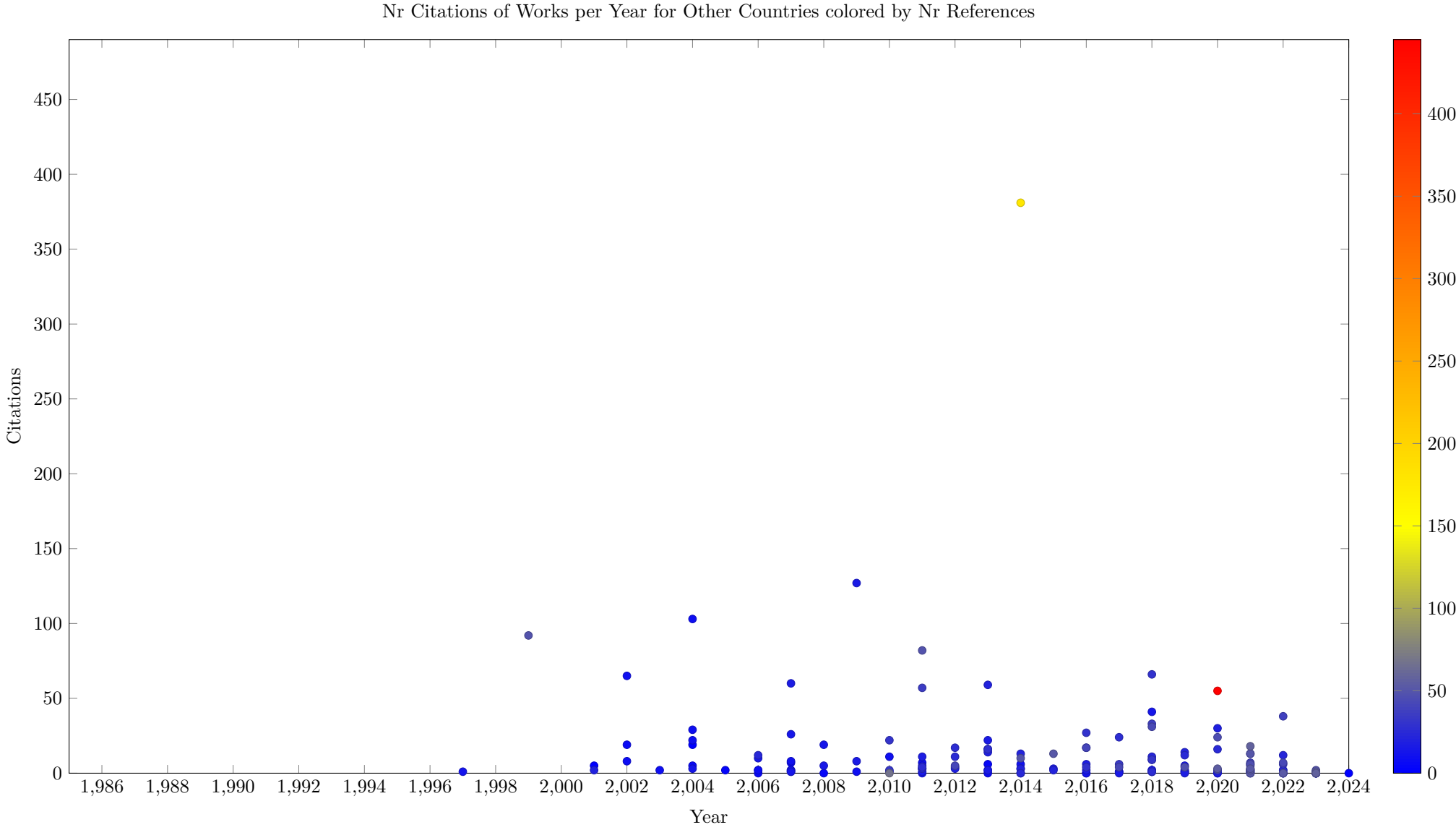
Nr Citations of Works per Year for Other Countries colored by Nr References
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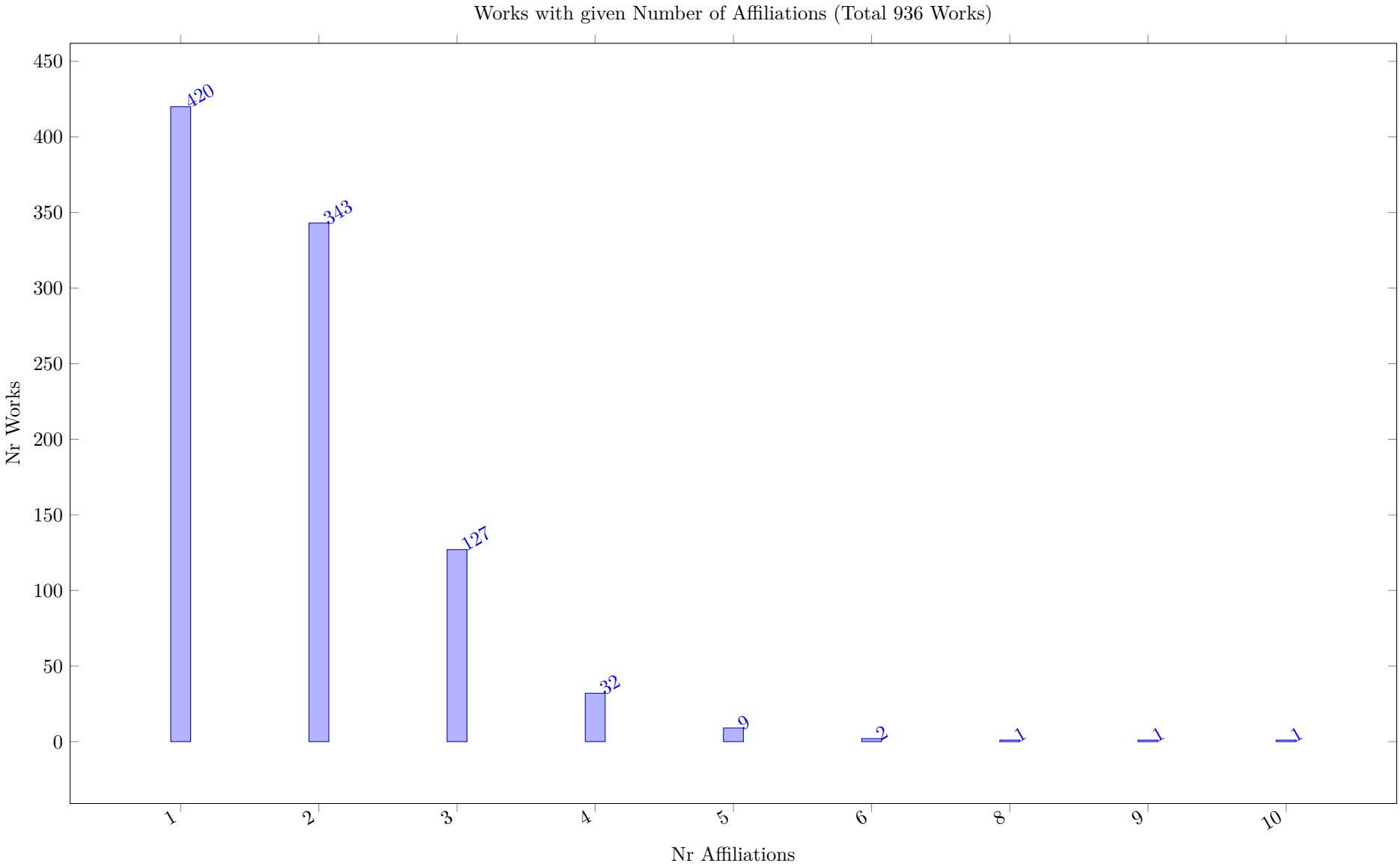
4 Collaborations

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.



The following heatmap is not complete. It needs a symmetric option to count a collaboration for both A-B and B-A.

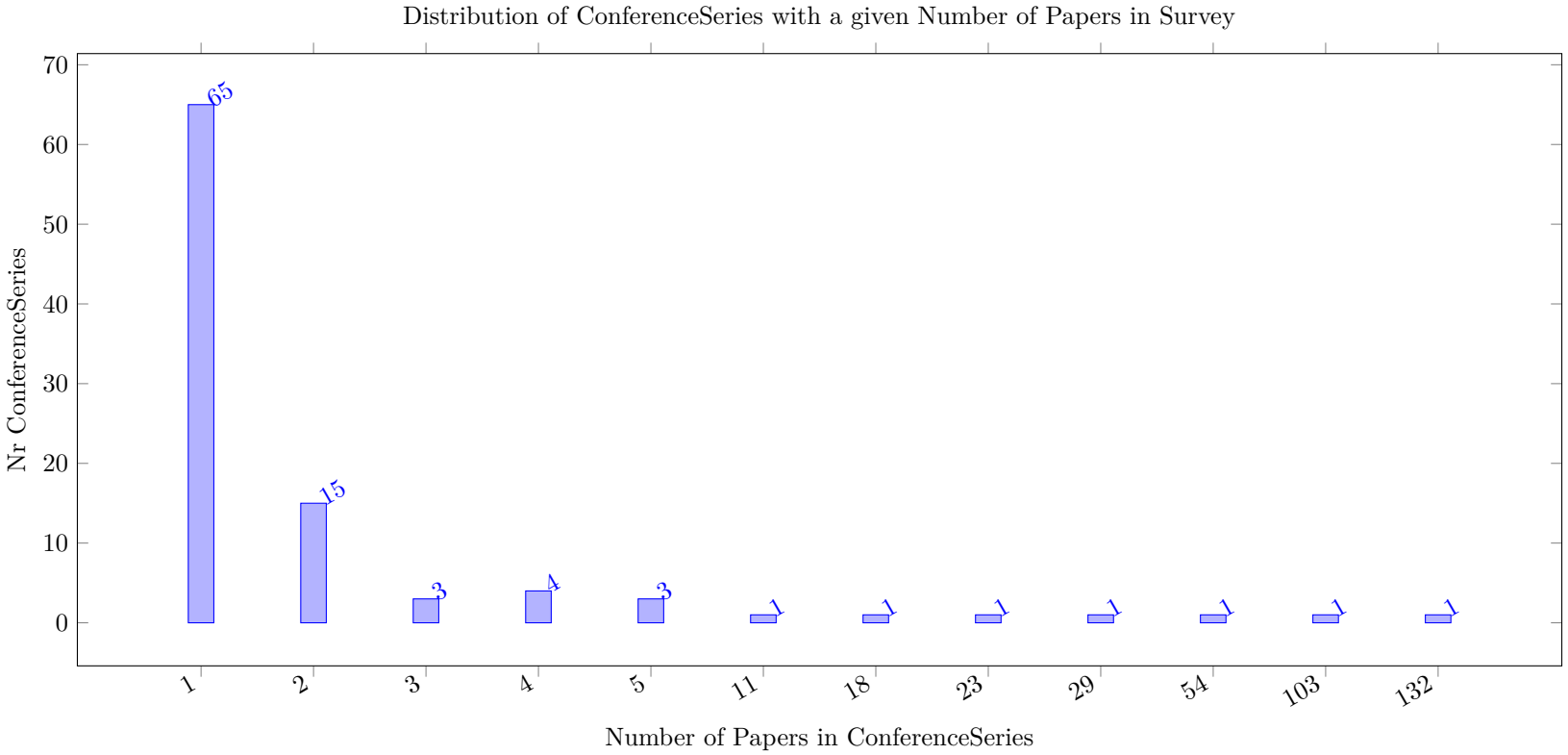
Table 8: Collaboration Data (Top 45 Inst by Decreasing Collab Fraction)

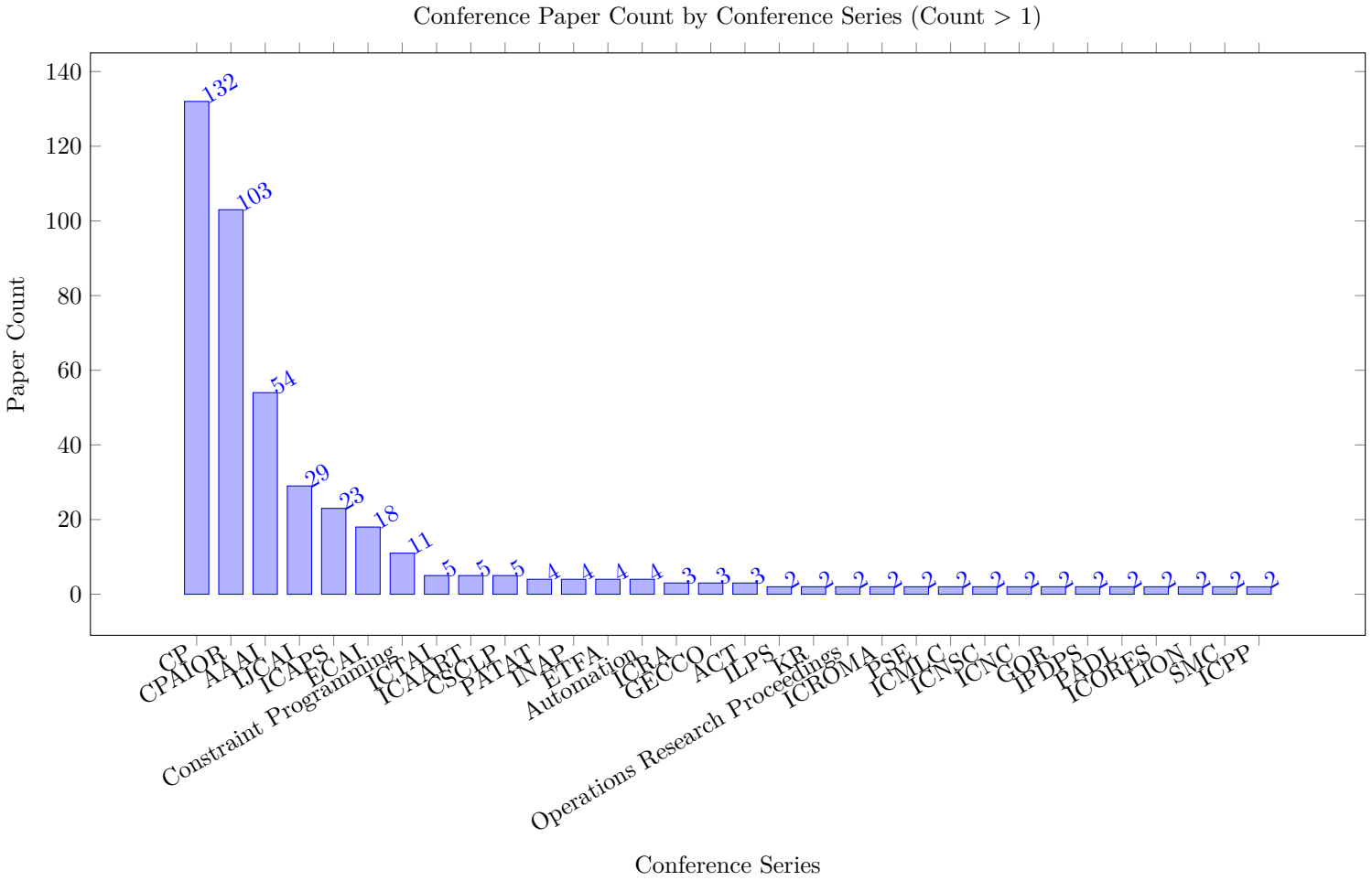
Inst	Nr Works	Collab Count	Domestic Collab	International Collab	Collab Fraction	Domestic Fraction	International Fraction	Collab Percentage	International Percentage
University of Toronto, Toronto, Canada	45	43	18	25	28.00	8.50	19.50	62.22	43.33
Université de Toulouse, Toulouse, France	30	40	20	20	23.00	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
Polytechnique Montréal, Montreal, Canada	15	11	7	4	9.00	6.50	2.50	60.00	16.67
Technische Universität Wien, Vienna, Austria	12	10	6	4	9.00	6.00	3.00	75.00	25.00
Charles University, Prague, Czech Republic	20	12	5	7	9.00	4.50	4.50	45.00	22.50
Université Catholique de Louvain, Louvain-la-Neuve, Belgium	19	12	2	10	9.00	1.33	7.67	47.37	40.35
University of Connecticut, Storrs, United States	8	12	8	4	8.00	5.83	2.17	100.00	27.08
Rotman School of Management, Toronto, Canada	8	19	15	4	8.00	6.17	1.83	100.00	22.92
Universidade de São Paulo, Sao Paulo, Brazil	8	9	5	4	7.00	4.50	2.50	87.50	31.25
Dokuz Eylül Üniversitesi, Izmir, Turkey	9	8	6	2	7.00	5.00	2.00	77.78	22.22
Universitat Politècnica de València, Valencia, Spain	13	10	1	9	7.00	1.00	6.00	53.85	46.15
Zuse Institute Berlin, Berlin, Germany	11	9	6	3	7.00	4.50	2.50	63.64	22.73
Université d'Avignon et des Pays du Vaucluse, Avignon, France	8	10	8	2	7.00	5.00	2.00	87.50	25.00
Bouygues, Paris, France	10	8	6	2	7.00	5.00	2.00	70.00	20.00
Politechnika Koszalinska, Koszalin, Poland	8	11	8	3	7.00	5.00	2.00	87.50	25.00
Université de Maroua, Maroua, Cameroon	6	10	6	4	6.00	3.67	2.33	100.00	38.89
ABB Corporate Research, Vasteras, Vasteras, Sweden	6	12	10	2	6.00	5.00	1.00	100.00	16.67
Izmir Ekonomi Universitesi, Izmir, Turkey	8	12	5	7	6.00	3.50	2.50	75.00	31.25
Magyar Tudomanyos Akademia, Budapest, Hungary	9	7	1	6	6.00	1.00	5.00	66.67	55.56
Brown University, Providence, United States	8	13	7	6	6.00	4.53	1.47	75.00	18.33
University of Windsor, Windsor, Canada	6	13	11	2	6.00	5.17	0.83	100.00	13.89
Universidad Nacional del Litoral, Santa Fe, Argentina	16	14	4	10	6.00	4.00	2.00	37.50	12.50
Technische Universität Berlin, Berlin, Germany	6	13	5	8	5.00	3.50	1.50	83.33	25.00
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
University of Luxembourg, Esch-sur-Alzette, Luxembourg	5	8	0	8	5.00	0.00	5.00	100.00	100.00

Table 9: Heat Map based on Collaboration between Institutions (Integer Count)

From/To	Total	France	United States	Canada	China	Australia	Germany	Sweden	Chile	United Kingdom	Ireland	Italy	Belgium	Turkey	Poland	Netherlands	Austria	Brazil	Spain	Argentina	Iran	Norway	Tunisia	Czech Republic	South Korea	Colombia	Cameroon	Singapore	Pakistan	Luxembourg	Russian Federation	Greece	Denmark	Mexico	Taiwan	Saudi Arabia	Japan	Hong Kong	Switzerland	Indonesia	Serbia	Egypt	Portugal	Algeria	Hungary	Macao	Finland	Romania	Sri Lanka	India	South Africa	Other
Total		153	117	95	89	67	62	62	53	40	37	32	29	27	23	21	17	17	15	14	13	12	11	10	10	9	9	8	8	7	7	7	6	5	4	4	4	4	4	4	4	3	3	3	3	2	1	1	1	
France	170	104	7	5	1	2	3	12	8	3	4	0	2	0	1	1	0	1	0	0	1	1	5	3	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0
United States	158	8	59	12	6	4	4	7	3	1	14	4	9	2	0	8	0	2	0	3	3	0	0	0	1	0	0	0	0	2	0	0	1	1	0	0	0	1	0	0	0	0	1	0	0	0	1	0	0	0	1
China	83	1	6	1	61	0	0	0	0	5	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	3	0	0	0	0	0
Canada	77	2	1	58	2	0	6	0	0	0	1	1	2	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Australia	68	1	0	1	2	43	4	0	0	3	1	5	0	1	0	1	1	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Germany	65	2	9	1	0	6	27	1	0	1	2	1	0	0	0	3	1	2	0	2	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	0	0	0	1	0	0	1
Chile	47	0	0	0	0	0	0	0	36	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	7	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Italy	39	2	2	0	2	4	2	2	1	4	1	11	2	1	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0
Sweden	34	2	0	0	0	0	0	27	0	0	0	2	1	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ireland	31	8	4	3	0	0	2	0	0	2	10	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Turkey	28	0	4	1	1	0	0	0	0	2	2	0	0	16	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Belgium	22	6	1	0	0	0	0	3	0	1	0	0	7	0	0	3	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spain	20	0	0	1	0	0	2	0	5	0	0	2	0	0	0	0	0	2	6	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Austria	18	0	0	0	0	1	1	0	0	0	0	1	0	0	0	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
United Kingdom	18	3	1	0	0	0	0	1	0	7	0	1	1	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Czech Republic	17	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	4	0	2	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Denmark	17	0	3	0	0	2	2	0	0	1	0	0	0	0	7	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Poland	17	0	0	0	0	0	2	0	0	0	0	0	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Norway	16	6	0	0	0	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Portugal	15	0	3	0	0	0	1	0	0	2	0	0	4	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
Singapore	14	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cameroon	13	0	0	2	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Netherlands	13	0	4	0	1	2	1	0	0	0	0	0	0	0	0	3	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Iran	13	0	1	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Brazil	13	1	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Taiwan	12	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	1	0	4	0	0	0	0	0	0	0	0	0	0	0
Greece	11	1	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pakistan	10	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	4	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
South Korea	10	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Russian Federation	9	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hungary	8	1	0	3	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0
Argentina	6	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
United Arab Emirates	6	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Switzerland	6	0	0	0	0	0	1	4	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tunisia	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Egypt	4	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0
Japan	4	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0
Hong Kong	4	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
India	3	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Romania	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0
Finland	2	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Saudi Arabia	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Israel	2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Mexico	2	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Thailand	2	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other		0	1	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	

5 Conference Papers by Most Common Conference Series

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Paper Count
Conference Series
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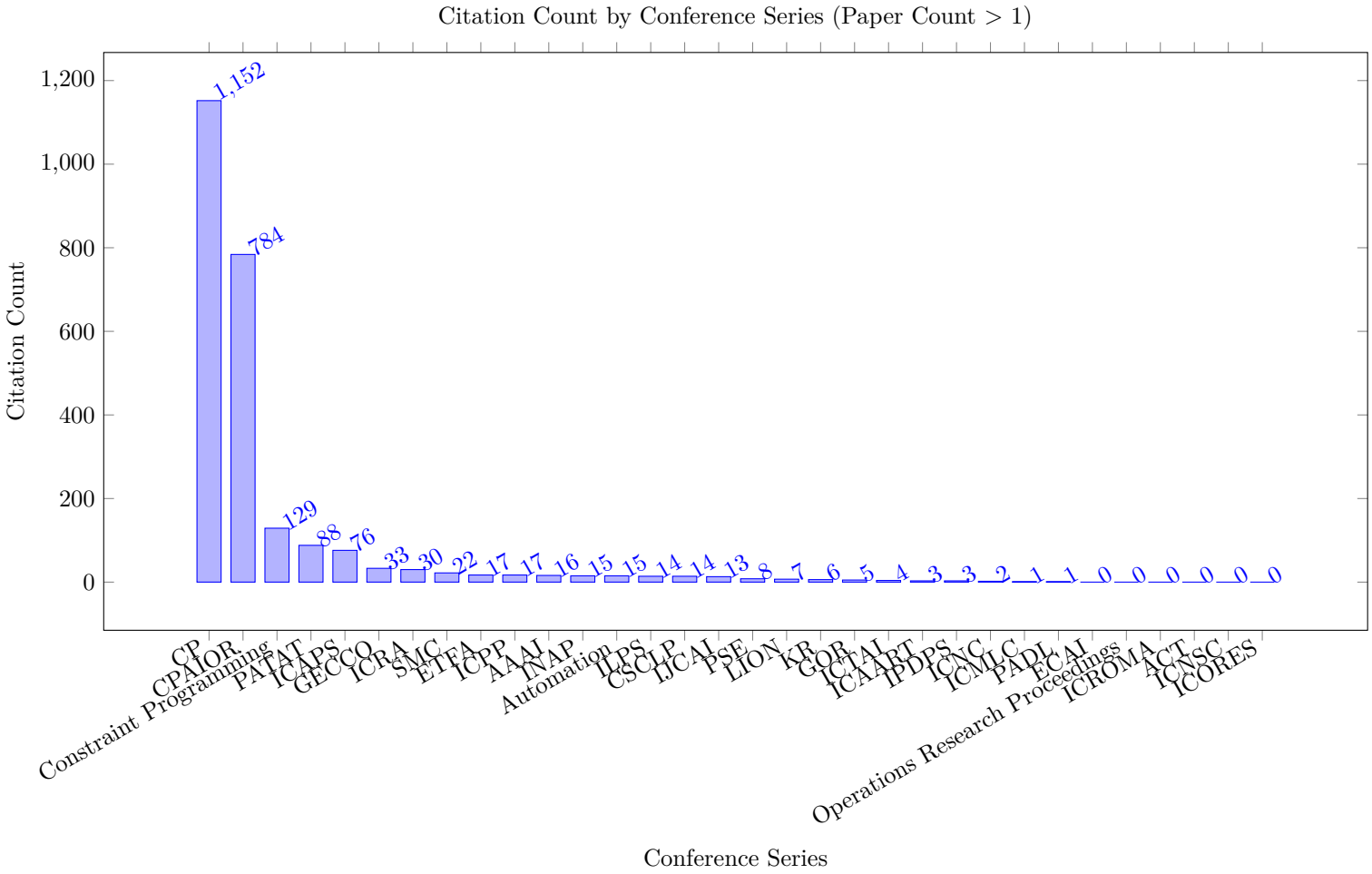
80
100
120
140
132
103
54
29
23
18
11
5
5
5
4
4
4
4
3
3
3
2
2
2
2
2
2
2
2
2
2
2
2
2
2
CP
CPAIOR
AAAI
IJCAI
ICAPS
ECAI
Constraint Programming
ICTAI
ICAART
CSCLP
PATAT
INAP
ETFA
Automation
ICRA
GECCO
ACT
ILPS
KR
Operations Research Proceedings
ICROMA
PSE
ICMLC
ICNSC
ICNC
GOR
IPDPS
PADL
ICORES
LION
SMC
ICPP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30
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17
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15
14
14
13
8
7
6
5
4
3
3
2
1
1
0
0
0
0
0
0
CP
CPAIOR
Constraint Programming
PATAT
ICAPS
GECCO
ICRA
SMC
ETFA
ICPP
AAAI
INAP
Automation
IPPS
CSCLP
IJCAI
PSE
LION
KR
GOR
ICTAI
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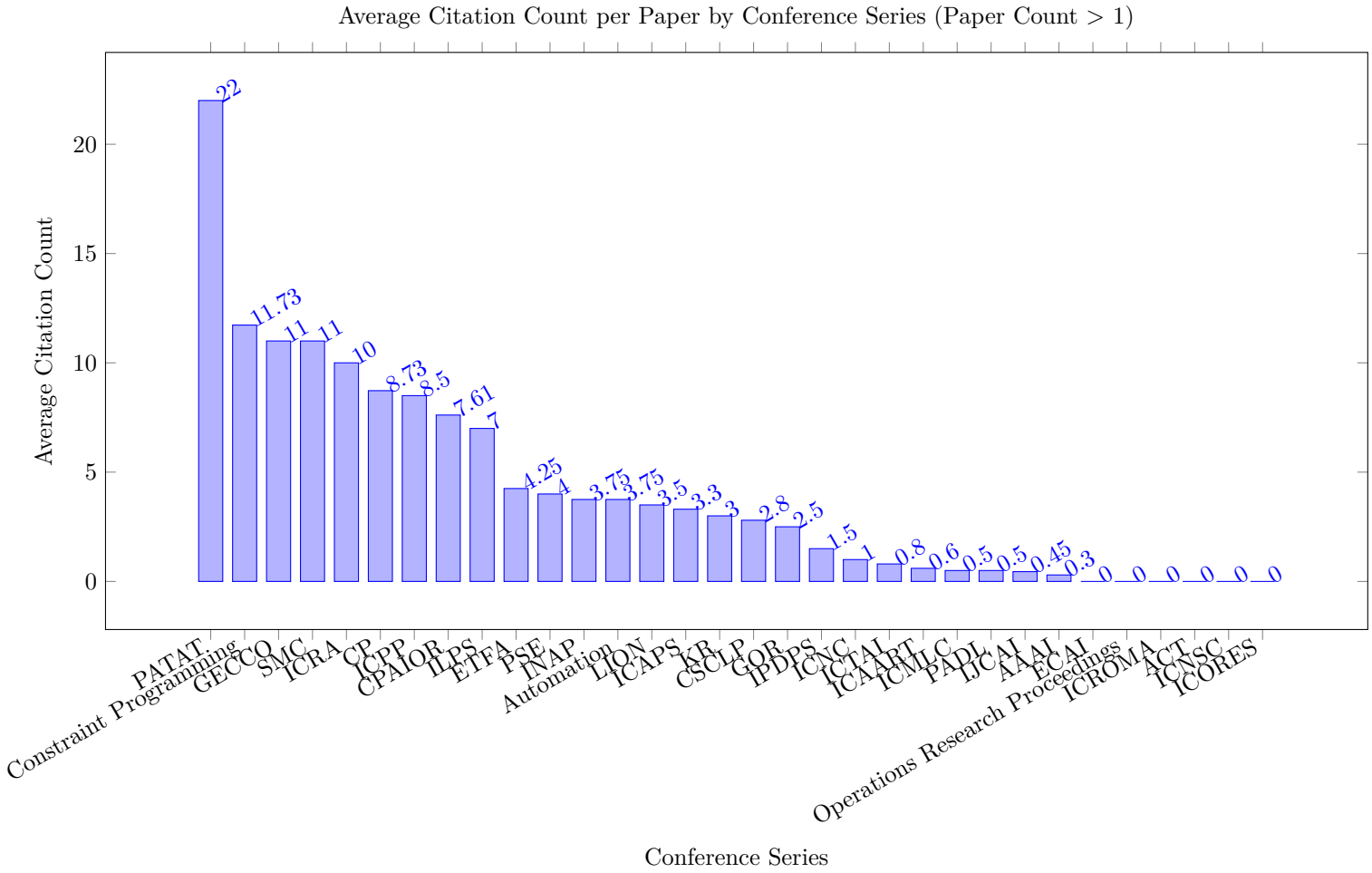
IPDPS
ICNC
ICMLC
PADL
ECAI
Operations Research Proceedings
ICROMA
ACT
ICNSC
ICORES
Conference Series


Average Citation Count per Paper by Conference Series (Paper Count > 1)
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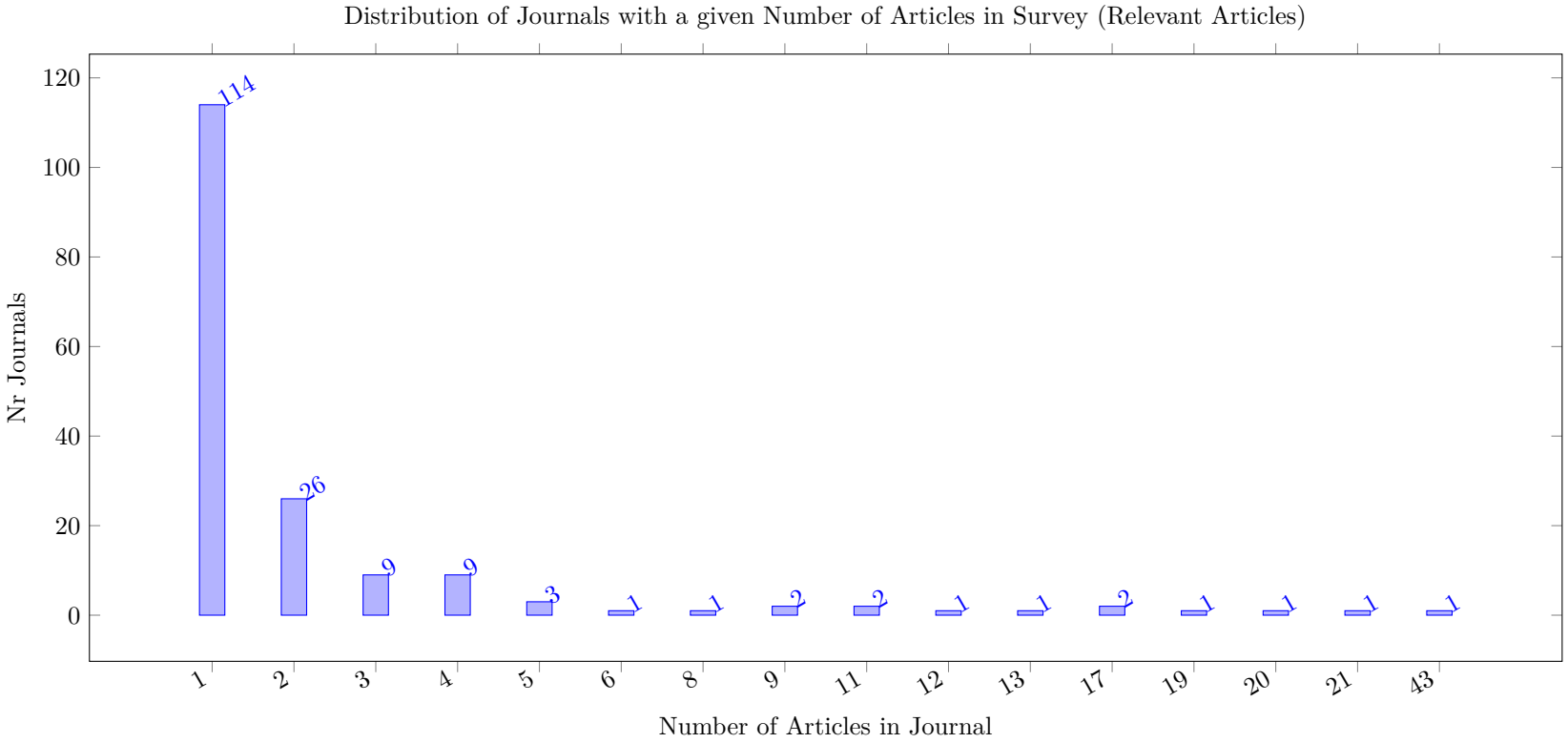
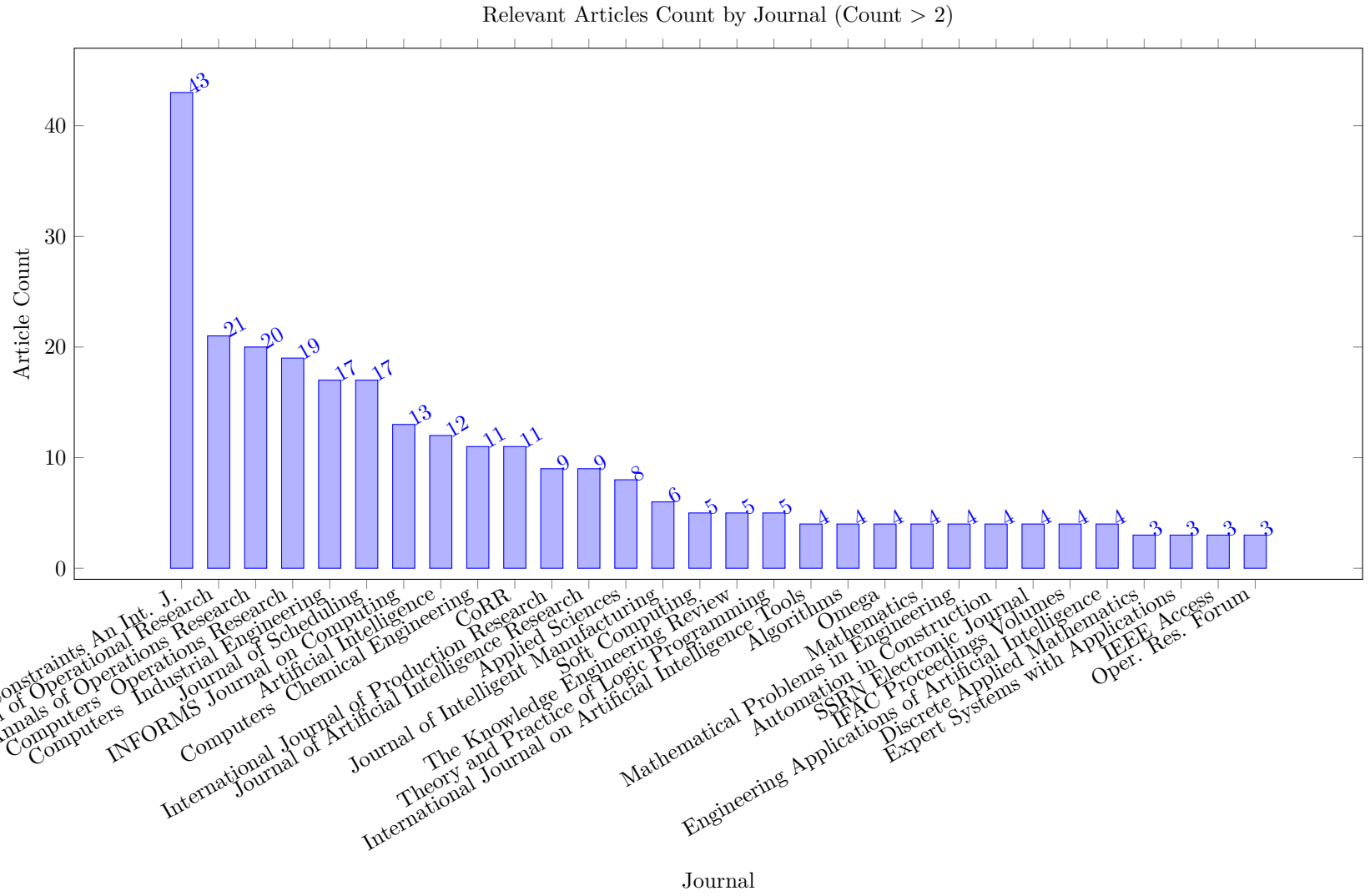
7
4.25
4
3.75
3.75
3.5
3.3
3
2.8
2.5
1.5
1
0.8
0.6
0.5
0.5
0.45
0.3
0
0
0
0
0
0
PATAT
Constraint Programming
GECCO
SMC
ICRA
CP
ICPP
CPAIOR
ILPS
ETFA
PSE
INAP
Automation
LION
ICAPS
KR
CSCLP
GOR
IPDPS
ICNC
ICTAI
ICAART
ICMLC
PADL
IJCAI
AAAI
ECAI
Operations Research Proceedings
ICROMA
ACT
ICNSC
ICORES
Conference Series

6 Journal Articles by Most Common Journals

6.1 Relevant Articles




Relevant Articles Count by Journal (Count > 2)
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17
17
13
12
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9
8
6
5
5
5
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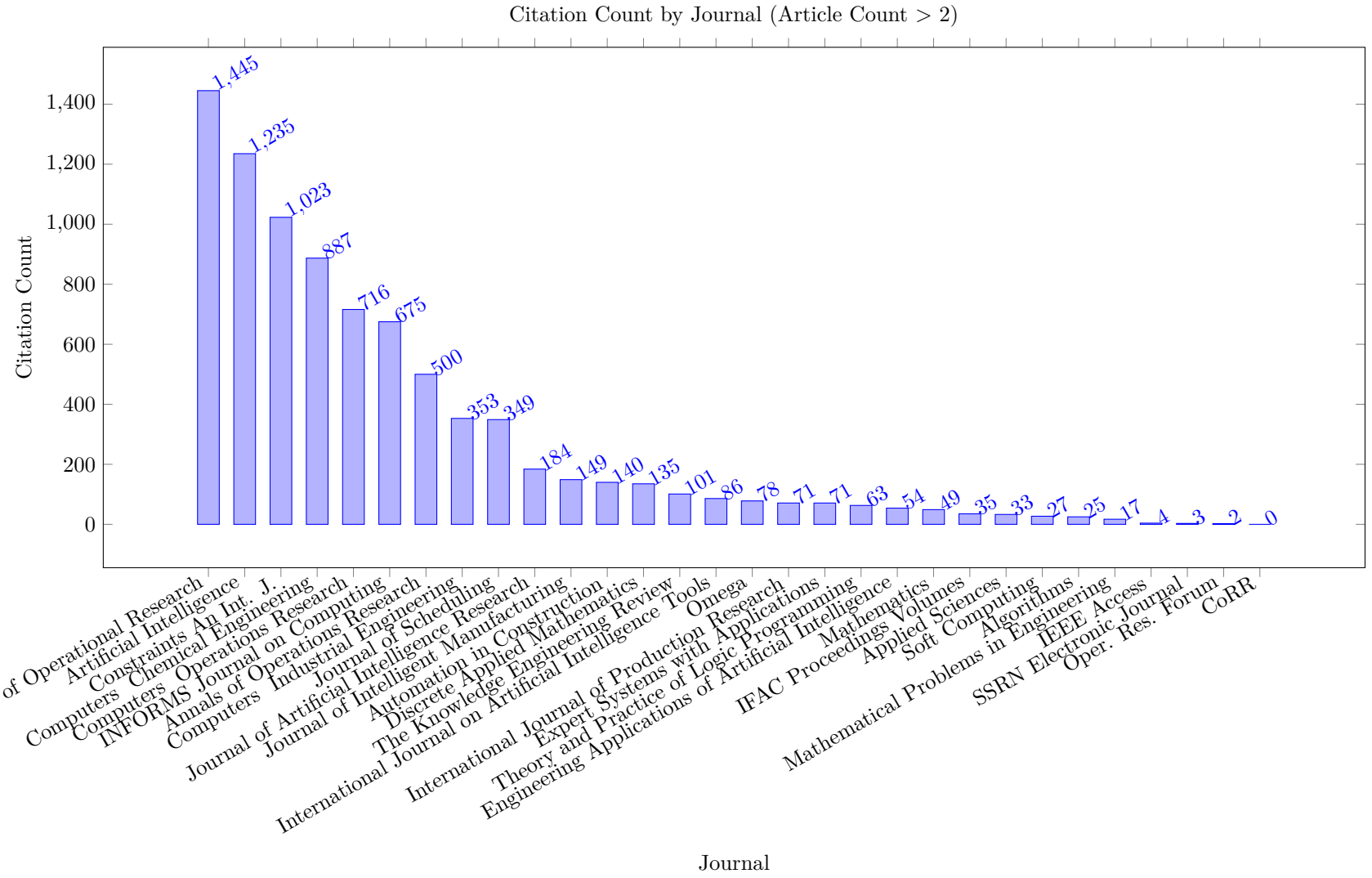
4
4
4
4
4
4
4
3
3
3
3
Constraints An Int. J.
European Journal of Operational Research
Annals of Operations Research
Computers Operations Research
Industrial Engineering
Computers
Journal of Scheduling
INFORMS Journal on Computing
Artificial Intelligence
Chemical Engineering
CoRR
International Journal of Production Research
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
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
Oper. Res. Forum
Journal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1,023
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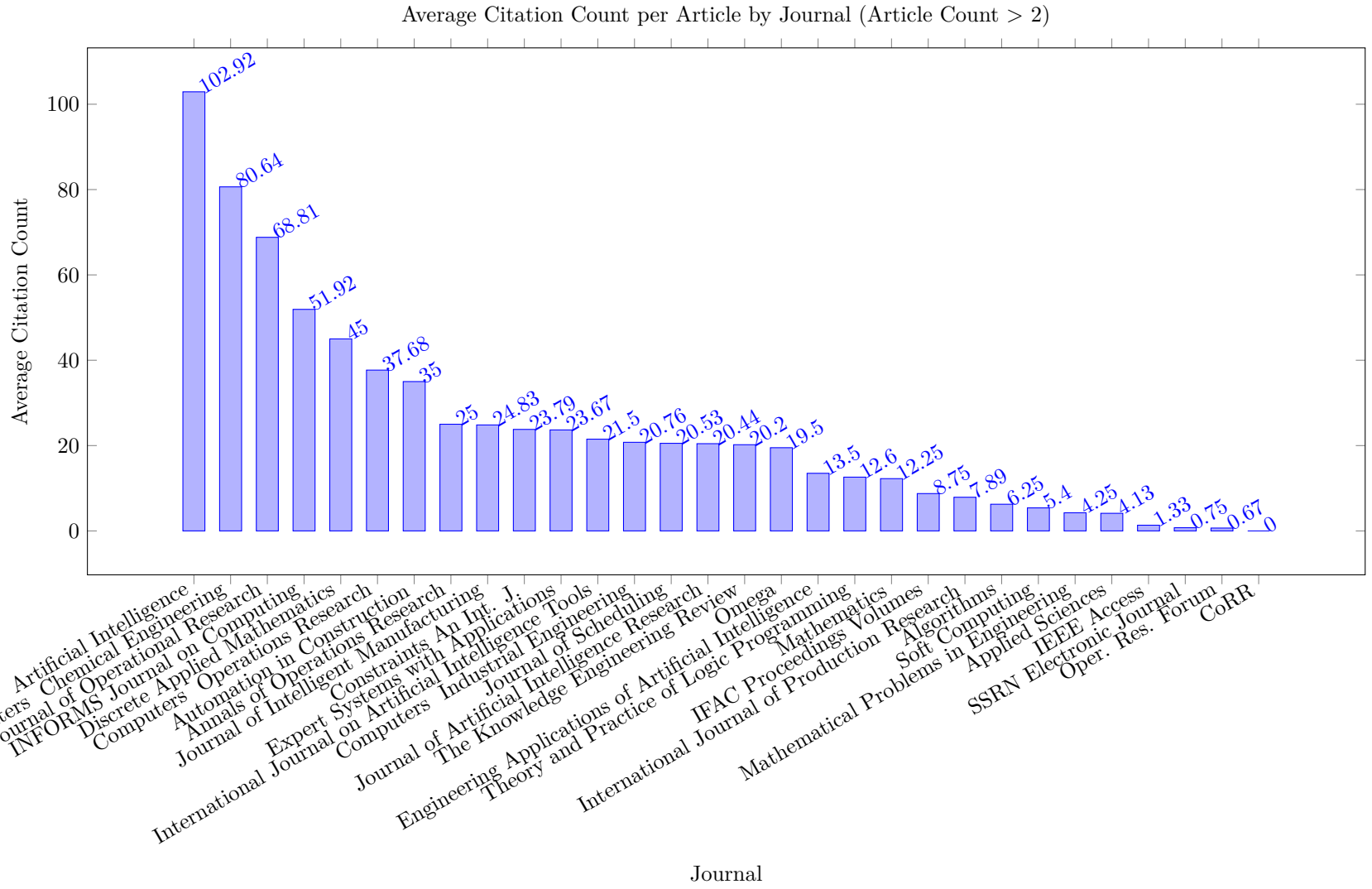
716
675
500
353
349
184
149
140
135
101
86
78
71
71
63
54
49
35
33
27
25
17
4
3
2
0
European Journal of Operational Research
Artificial Intelligence
Constraints An Int. J.
Computers Chemical Engineering
Computers Operations Research
INFORMS Journal on Computing
Annals of Operations Research
Computers Industrial Engineering
Journal of Scheduling
Journal of Artificial Intelligence Research
Journal of Intelligent Manufacturing
Automation in Construction
Discrete Applied Mathematics
The Knowledge Engineering Review
International Journal on Artificial Intelligence Tools
Omega
International Journal of Production Research
Expert Systems with Applications
Theory and Practice of Logic Programming
Engineering Applications of Artificial Intelligence
IFAC Proceedings Volumes
Mathematics
Applied Sciences
Soft Computing
Algorithms
Mathematical Problems in Engineering
IEEE Access
SSRN Electronic Journal
Oper. Res. Forum
CoRR
Journal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4.13
1.33
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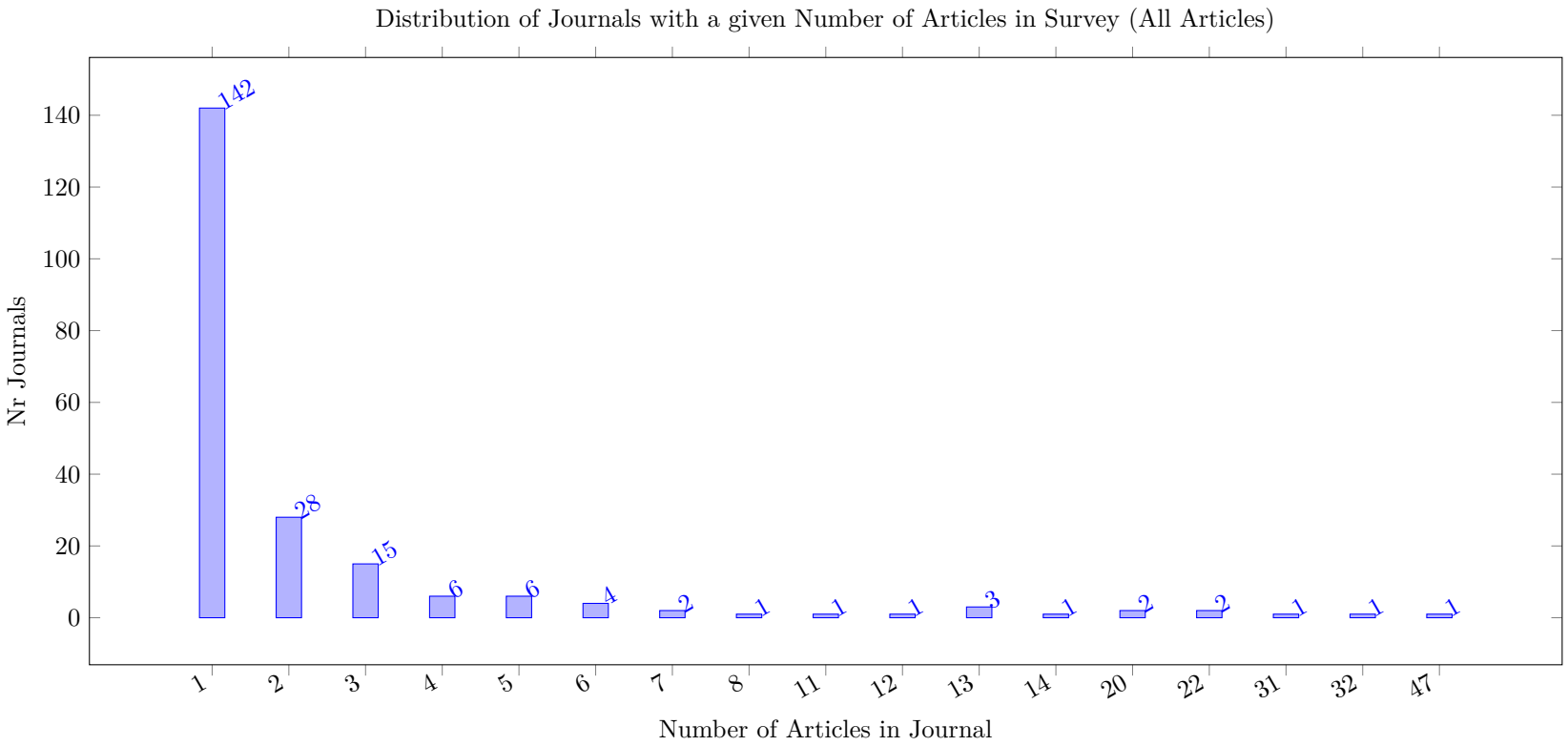
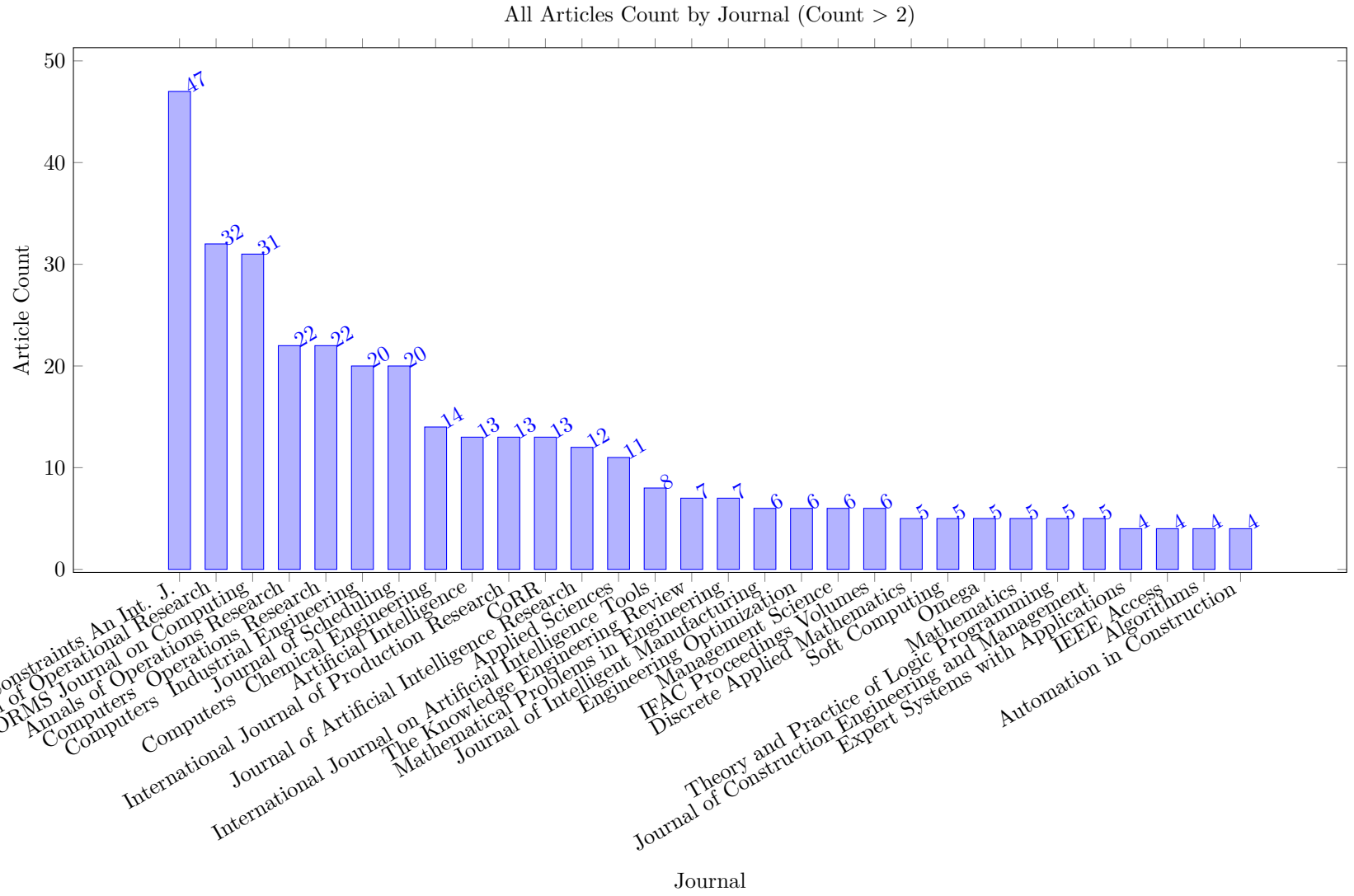
Artificial Intelligence
Computers
Chemical Engineering
European Journal of Operational Research
INFORMS Journal on Computing
Discrete Applied Mathematics
Computers Operations Research
Automation in Construction
Annals of Operations Research
Journal of Intelligent Manufacturing
International Journal on Artificial Intelligence Tools
Expert Systems with Applications
Constraints An Int. J.
Computers Industrial Engineering
Journal of Scheduling
The Knowledge Engineering Review
Journal of Artificial Intelligence Research
Engineering Applications of Artificial Intelligence
Theory and Practice of Logic Programming
Omega
Mathematics
IFAC Proceedings Volumes
International Journal of Production Research
Algorithms
Soft Computing
Mathematical Problems in Engineering
Applied Sciences
IEEE Access
SSRN Electronic Journal
Oper. Res. Forum
CoRR
Journal

6.2 All Articles




All Articles Count by Journal (Count > 2)
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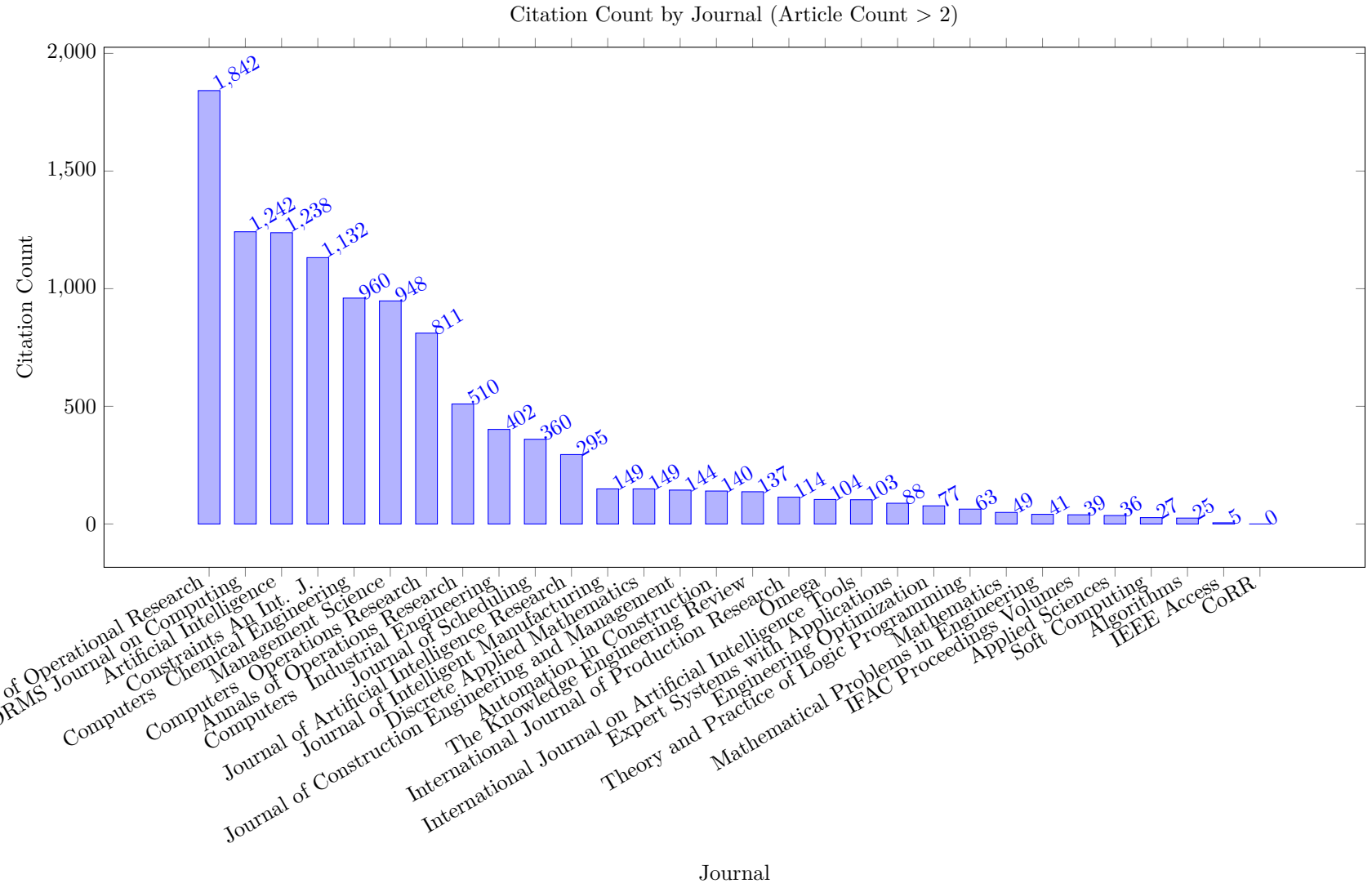
Constraints An Int. J.
European Journal of Operational Research
INFORMS Journal on Computing
Annals of Operations Research
Computers Operations Research
Industrial Engineering
Journal of Scheduling
Chemical Engineering
Artificial Intelligence
Computers Research
CoRR
Applied Sciences
International Journal of Artificial Intelligence Tools
Journal of Artificial Intelligence Research
The Knowledge Engineering Review
International Journal on Artificial Intelligence Tools
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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360
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137
114
104
103
88
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25
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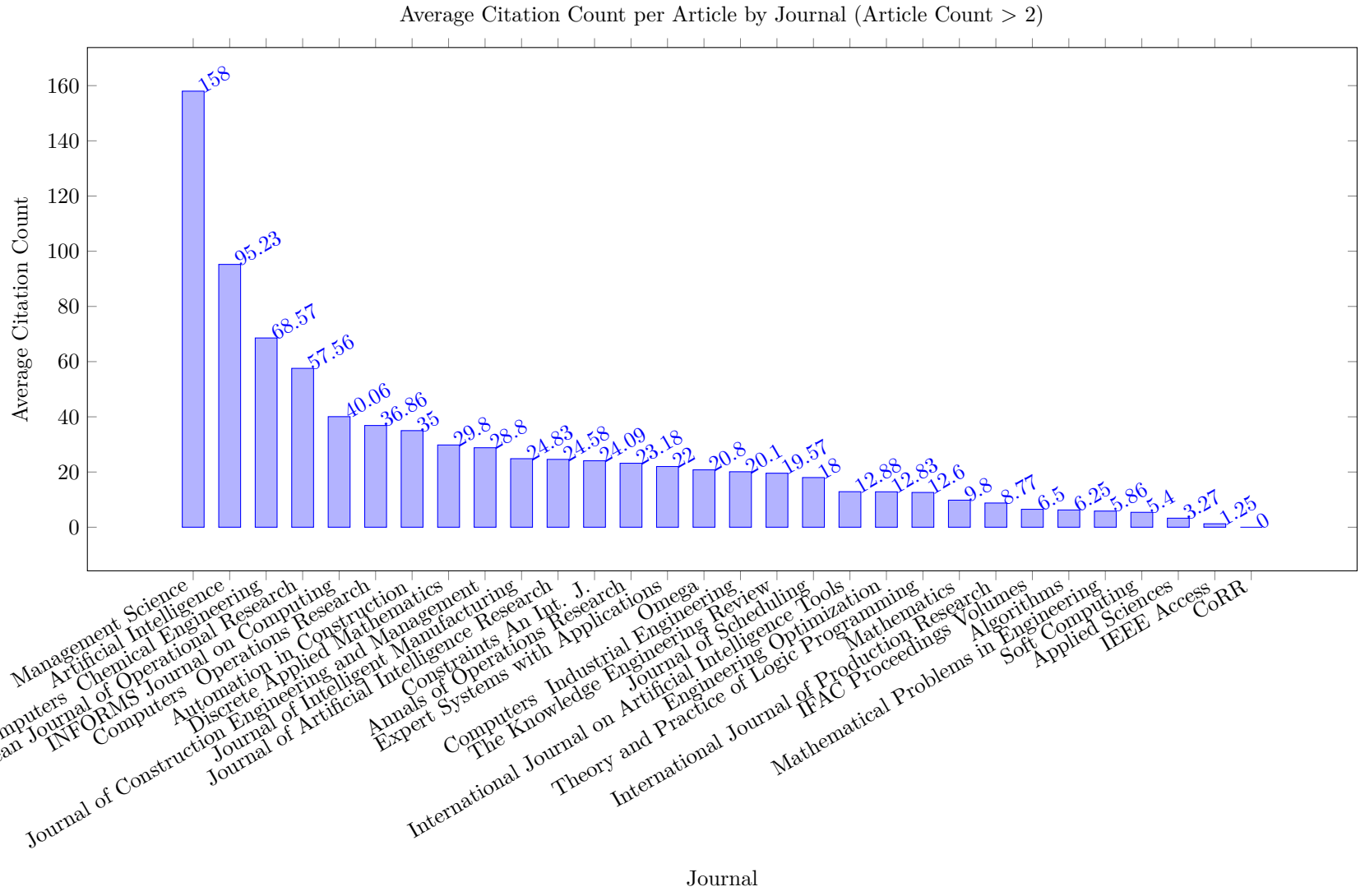
0
European Journal of Operational Research
INFORMS Journal on Computing
Artificial Intelligence
Constraints An Int. J.
Chemical Engineering
Computers
Management Science
Computers Operations Research
Annals of Operations Research
Computers
Industrial Engineering
Journal of Scheduling
Journal of Artificial 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
Theory and Practice of Logic Programming
Engineering Optimization
Mathematical Problems in Engineering
IFAC Proceedings Volumes
Mathematics
Applied Sciences
Soft Computing
Algorithms
IEEE Access
CoRR
Journal


Average Citation Count per Article by Journal (Article Count > 2)
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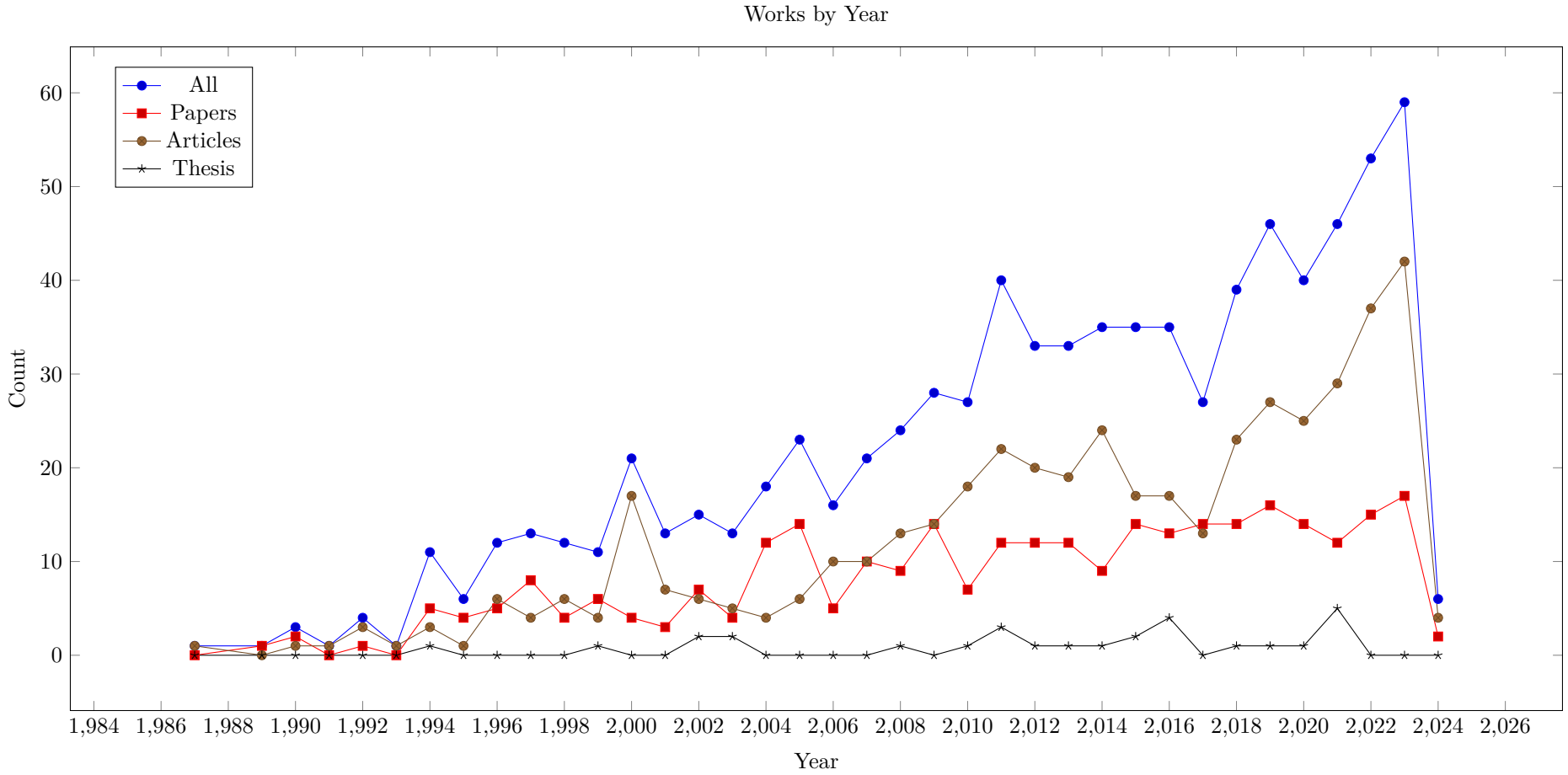
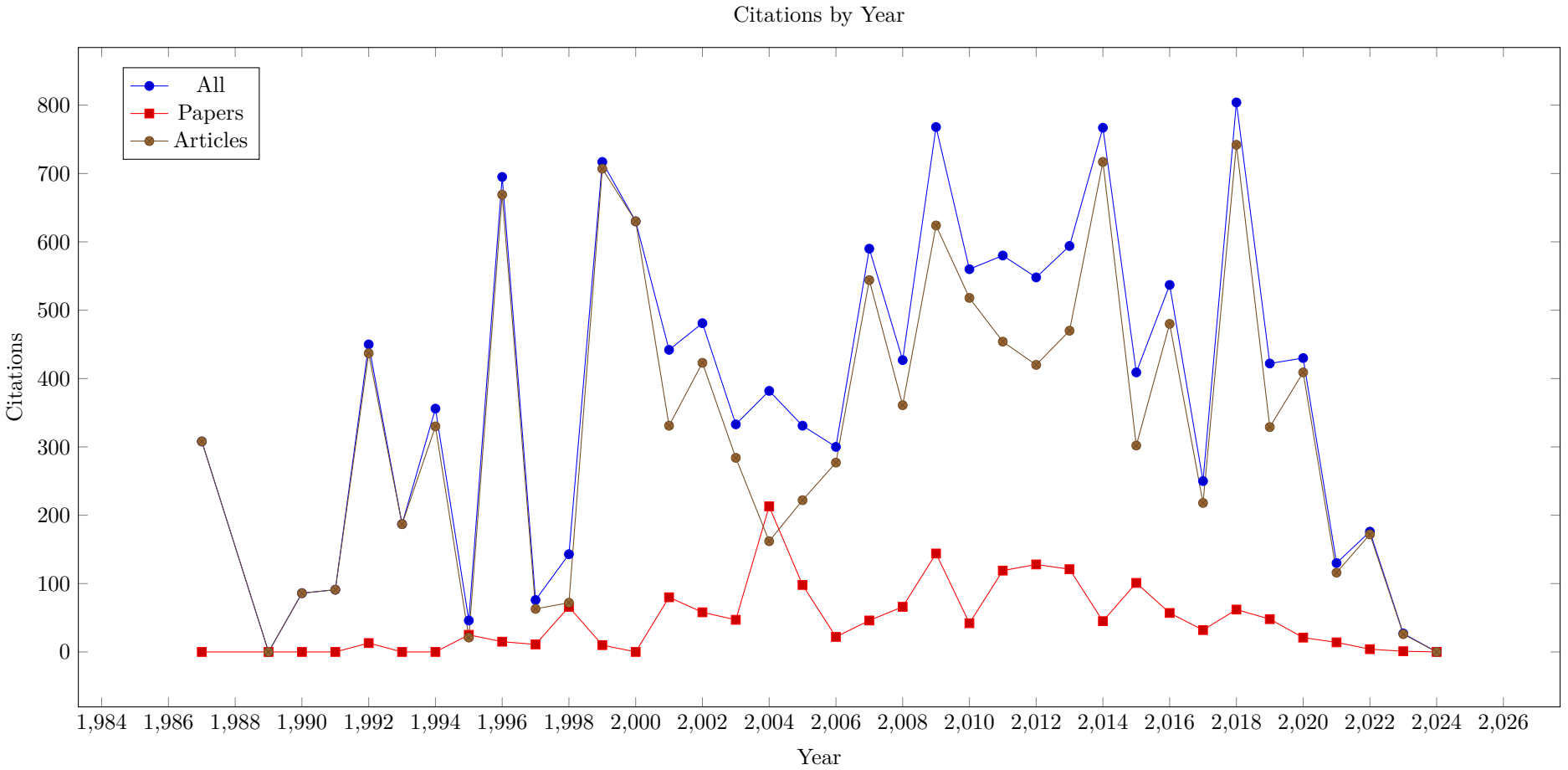
40.06
36.86
35
29.8
28.8
24.83
24.58
24.09
23.18
22
20.8
20.1
19.57
18
12.88
12.83
12.6
9.8
8.77
6.5
6.25
5.86
5.4
3.27
1.25
0
Management Science
Artificial Intelligence
Computers
Chemical Engineering
European Journal of Operational Research
INFORMS Journal on Computing
Computers Operations Research
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
Theory and Practice of Logic Programming
Journal of Scheduling
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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100
200
300
400
500
600
700
800
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1,986
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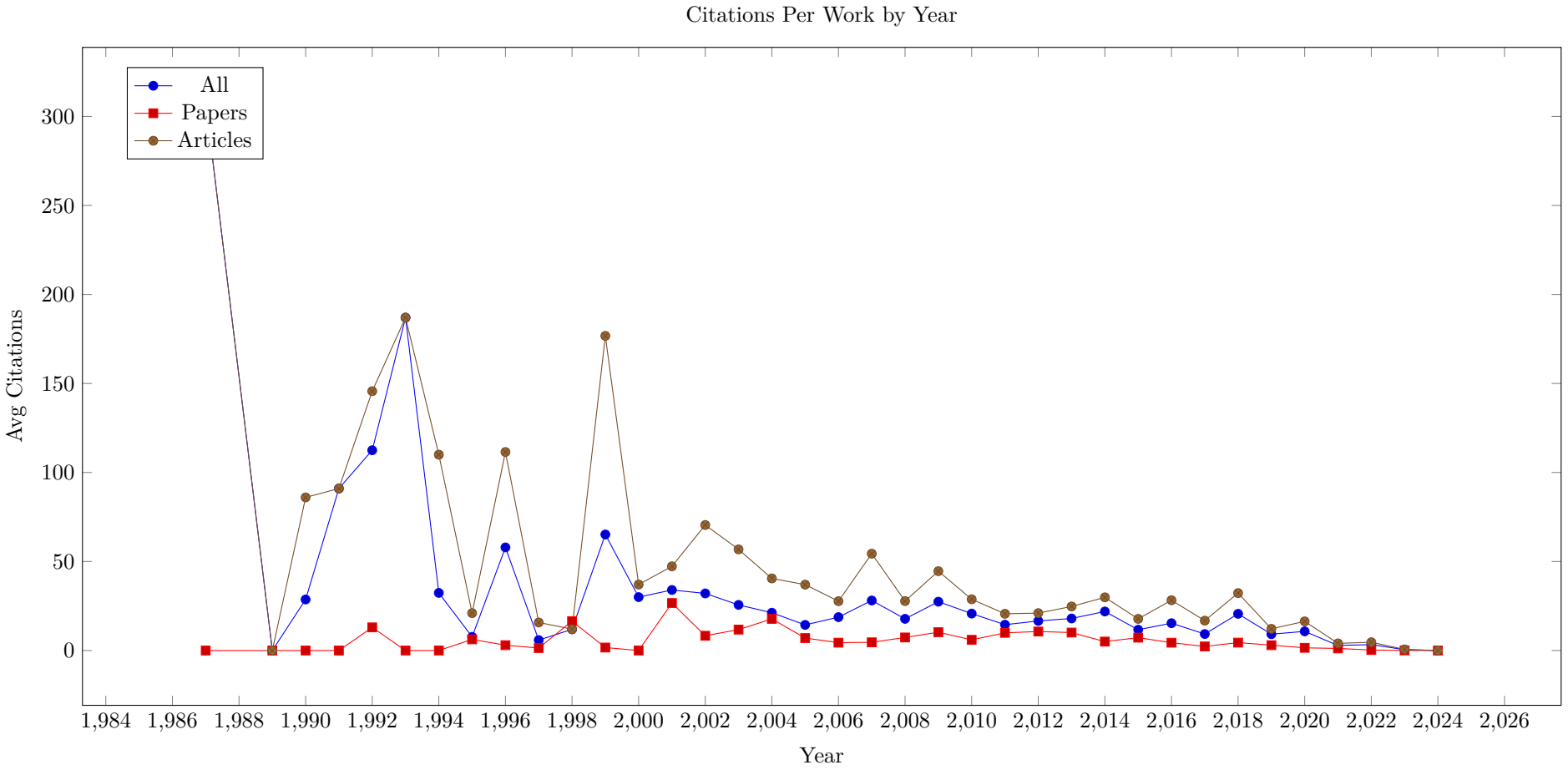
Year


Citations Per Work by Year
All
Papers
Articles
Avg Citations
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100
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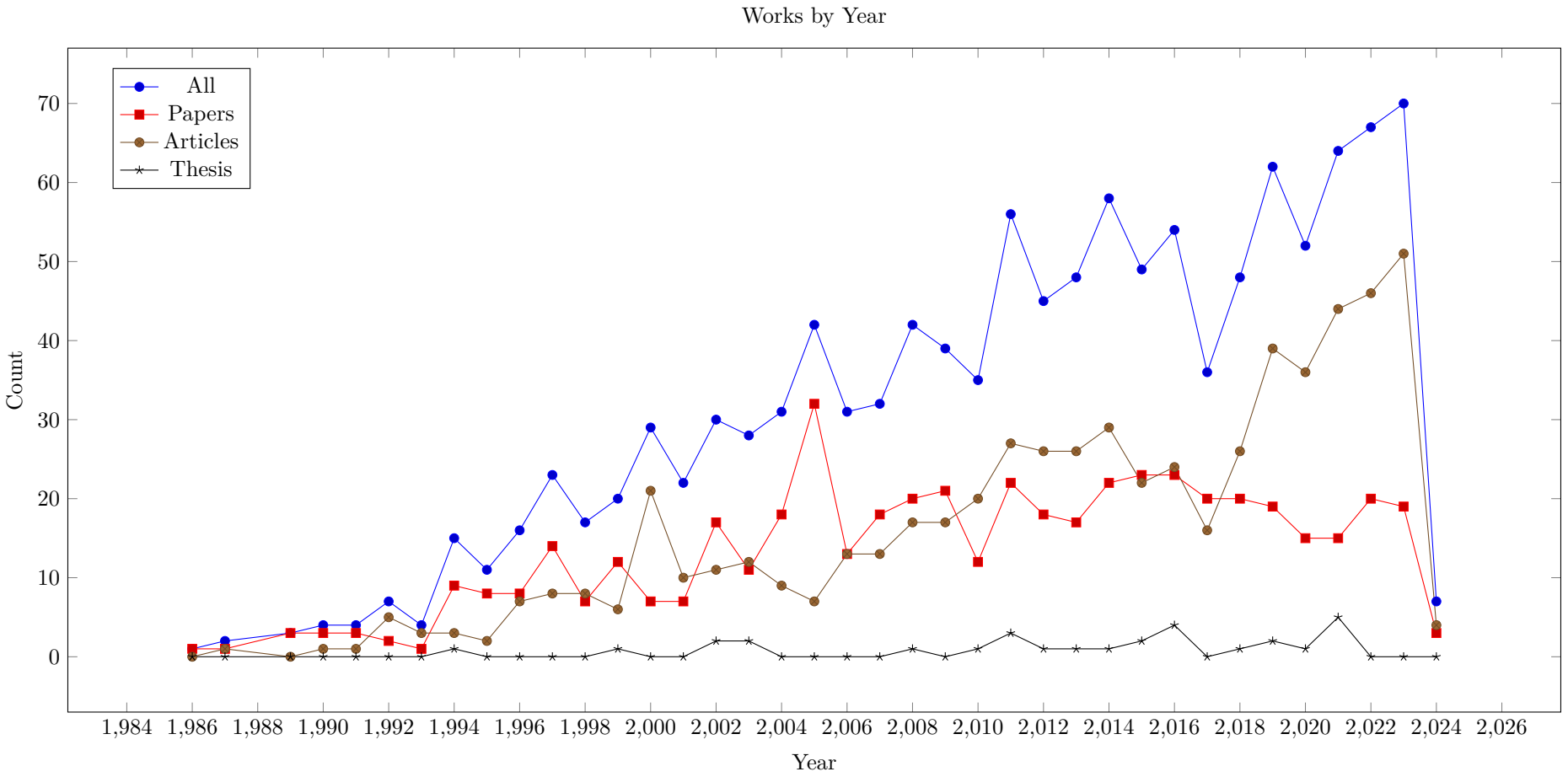
Year

7.2 All Works


Works by Year
All
Papers
Articles
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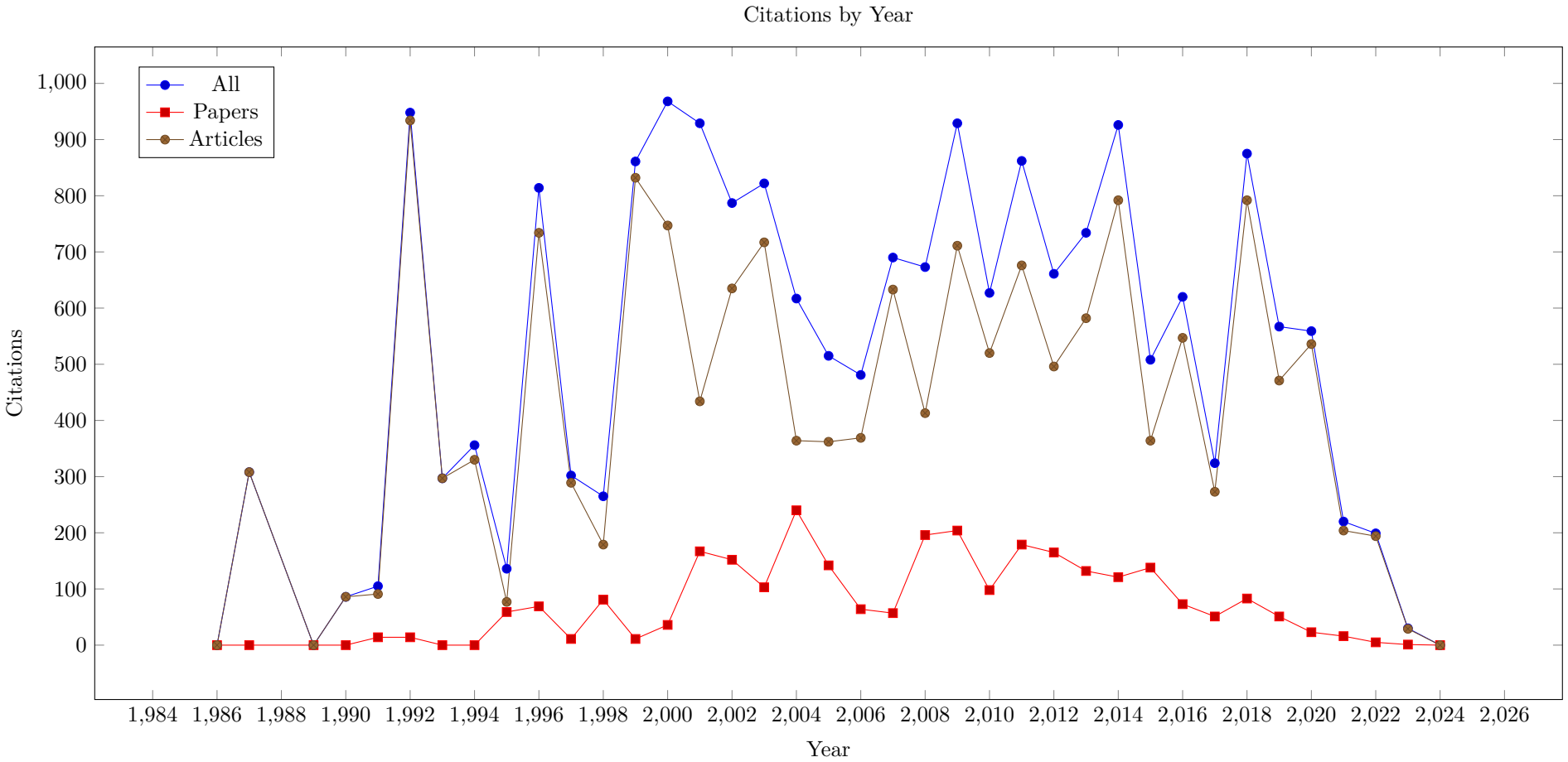
Year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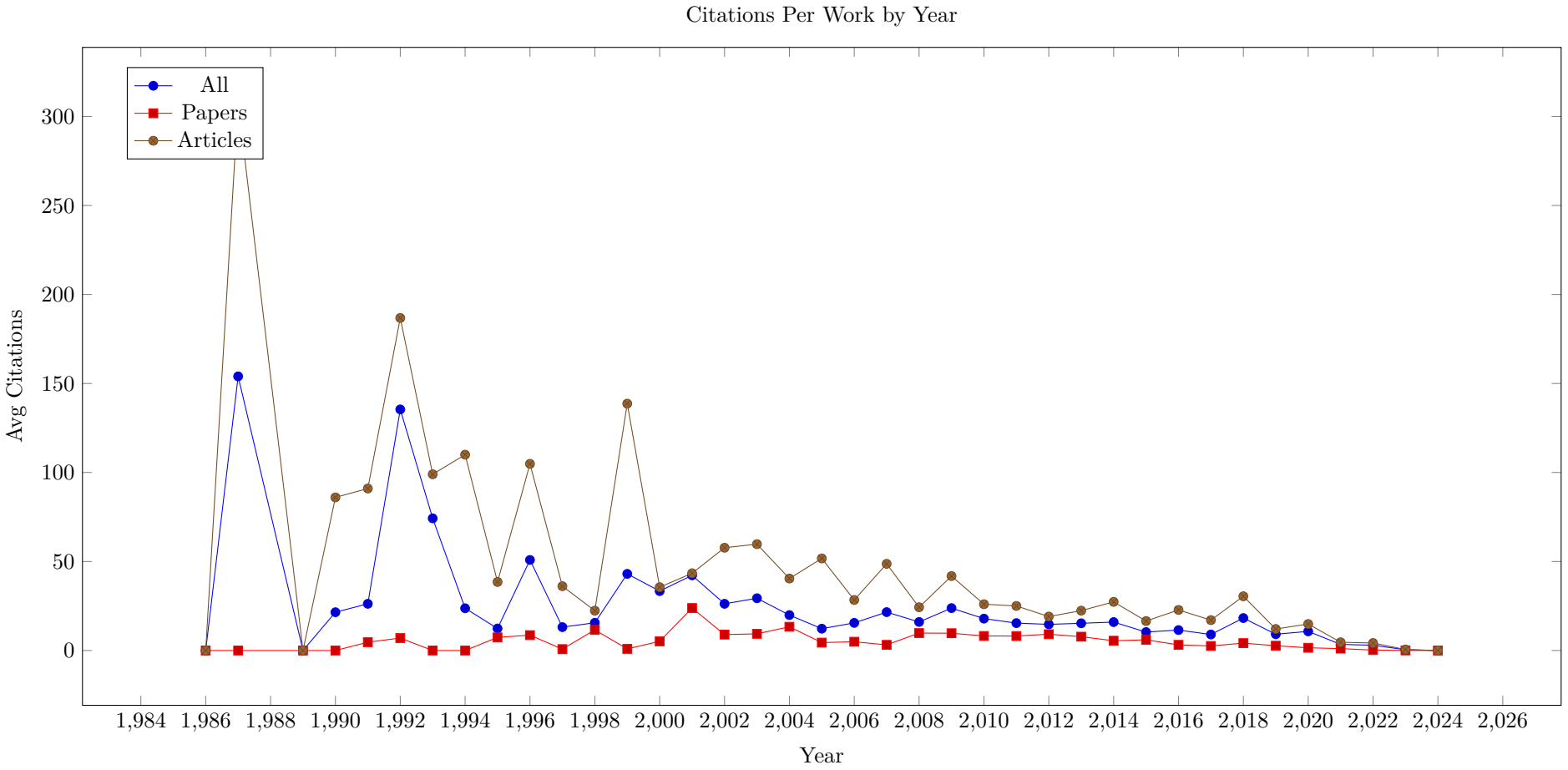
Citations Per Work by Year
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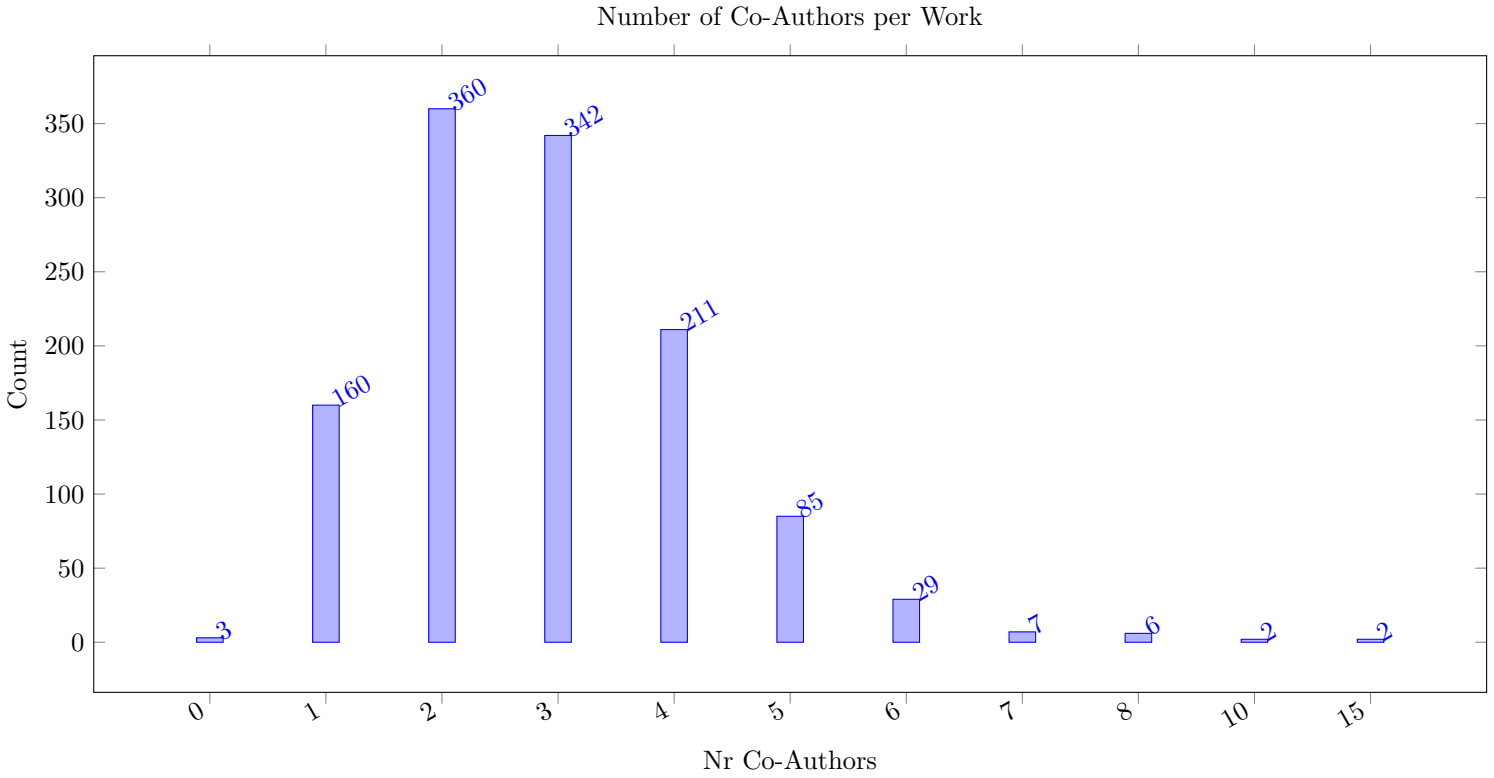
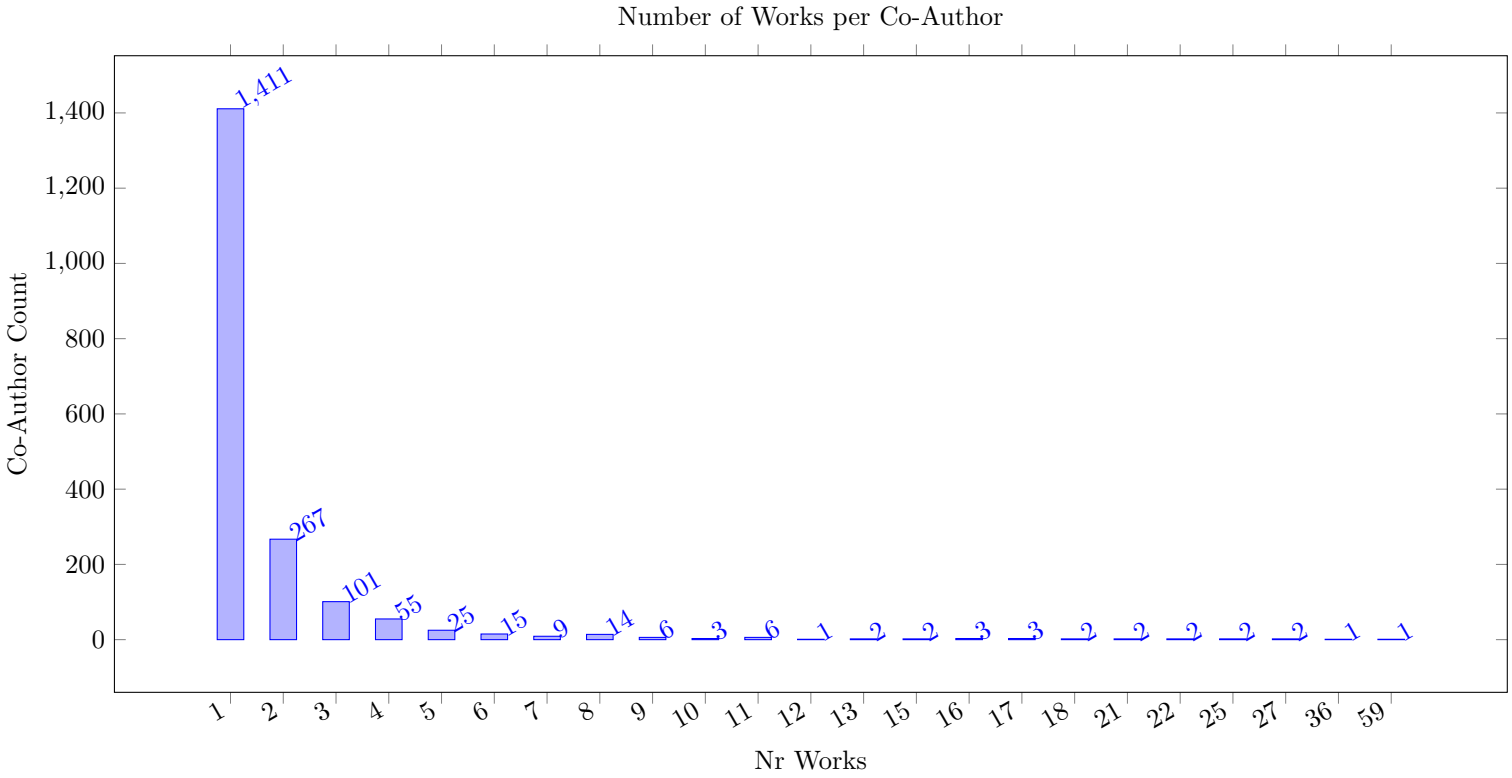
2,024
2,026
Year

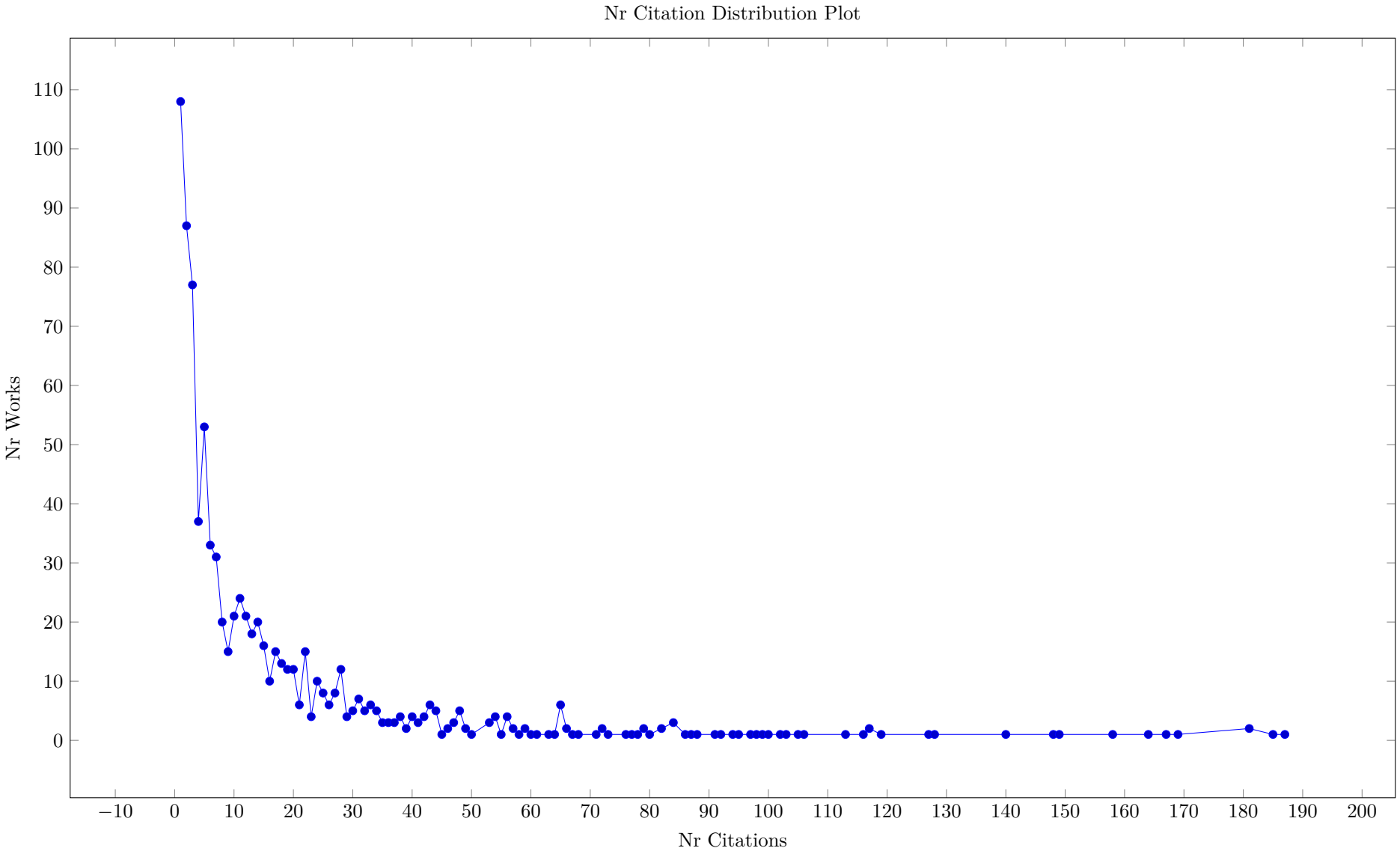
8 Number of Coauthors per Work



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.

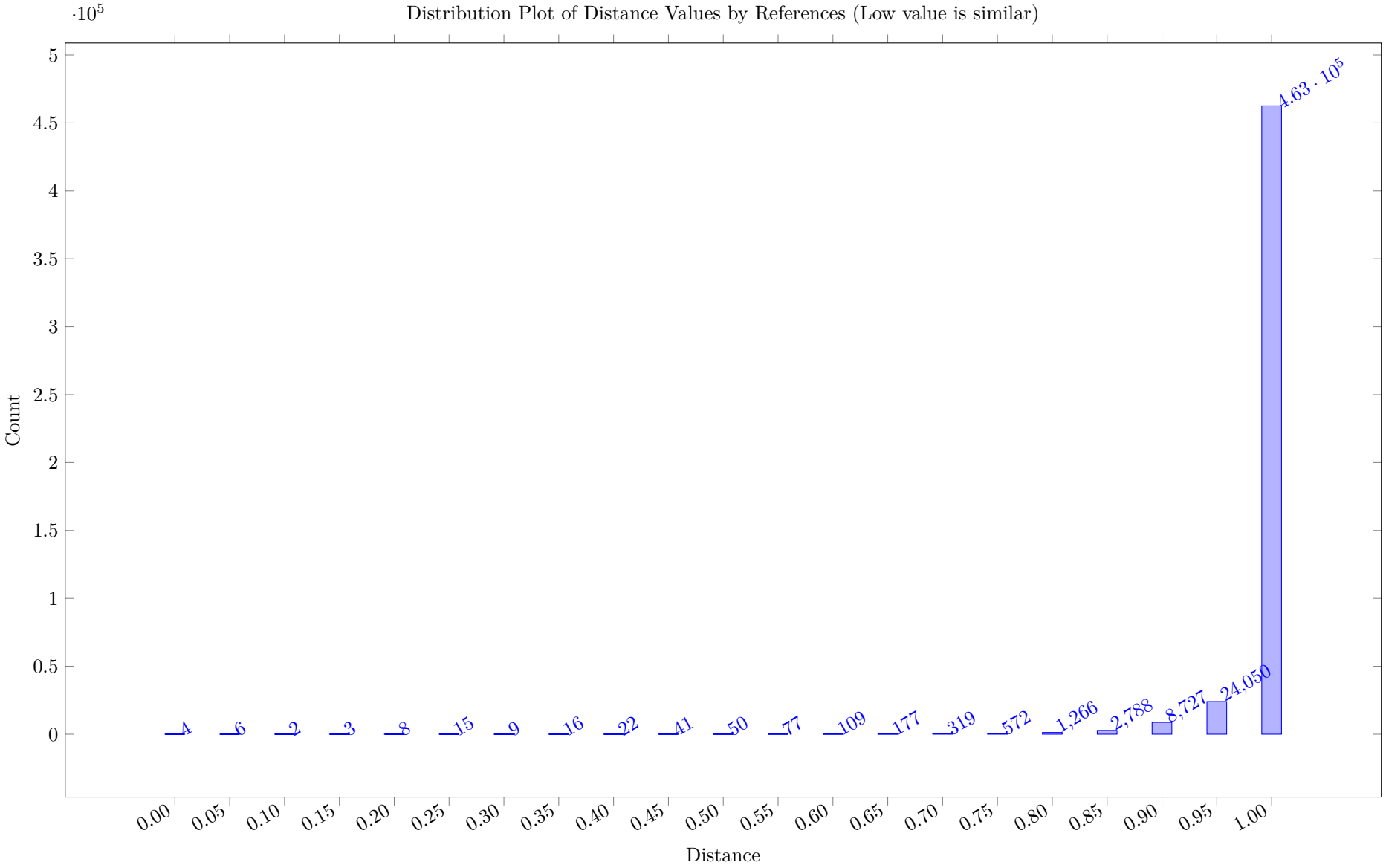
The vast majority of paper pairs has a distance close to one, as their references and citations do not overlap much.

Table 10: Heat Map based on rounded DotProduct Similarity of Concepts (high = similar)

From/To	Total	ZarandiASC20	Schutt11	abs-1902-09244	YunusogluY22	ZhuSZW23	VilimLS15	Siala15a	abs-2211-14492	ZeballosNH11	abs-1911-04766	abs-2402-00459	ZhangBB22	YuraszeckMCCR23	ZeballosQH10	YuraszeckMPV22	ZeballosH05	abs-2305-19888	ZhouGL15	Zahout21	TerekhovDOB12	Zhou97	UnsalO13	Other
Total		108,215	81,187	80,570	80,414	78,247	77,626	76,865	76,236	73,936	73,451	72,810	72,208	71,547	69,574	69,346	68,160	67,959	67,667	67,495	66,880	66,713	66,224	
Baptiste02	102,303	330	266	173	201	169	172	226	161	172	148	135	159	163	149	193	137	144	147	159	201	170	144	98,384
Astrand21	100,850	307	228	174	200	165	162	191	151	143	157	142	153	144	132	173	130	149	159	149	175	126	164	97,176
Beck99	92,738	240	229	154	164	157	155	194	143	147	138	137	133	126	137	130	132	123	126	141	152	153	144	89,383
BartakSR10	86,983	232	207	134	161	152	143	177	142	140	118	120	148	118	129	145	126	115	132	134	159	151	130	83,770
Dejemeppe16	86,807	336	283	197	219	168	174	251	170	182	171	163	160	151	157	162	140	144	139	167	181	152	168	82,772
AwadMDMT22	82,682	226	168	153	176	134	132	135	133	150	129	120	117	130	130	132	123	129	112	128	149	106	130	79,640
BeckDDF98	80,067	223	160	146	158	136	124	161	126	145	111	115	116	110	127	115	130	98	110	112	149	121	119	77,155
AbreuN22	78,037	229	146	137	167	142	124	128	137	104	108	124	116	134	111	161	105	133	126	117	126	79	115	75,168
AbreuPNF23	77,547	232	155	146	176	135	114	125	124	113	105	123	108	125	107	161	105	126	123	118	138	86	120	74,682
AfsarVPG23	77,434	190	137	138	144	128	121	125	132	108	118	117	110	121	117	133	107	102	104	111	119	103	123	74,726
AstrandJZ20	76,313	181	153	131	131	122	127	150	108	110	109	102	122	114	101	119	102	105	115	99	123	97	115	73,677
ArtiguesLH13	75,129	158	149	123	152	95	119	125	108	134	109	101	97	94	113	97	117	101	100	106	128	108	108	72,587
Groleaz21	73,824	368	246	198	227	201	195	234	191	166	171	179	181	159	144	206	131	162	166	190	205	150	155	69,599
ArmstrongGOS21	72,937	174	148	121	145	136	119	124	118	99	123	104	118	119	110	117	104	118	130	112	104	94	115	70,285
Fahimi16	72,895	239	257	152	147	159	159	226	140	146	138	118	140	131	130	136	128	122	132	126	160	154	153	69,502
BartakSR08	72,552	158	164	108	122	123	121	151	112	105	95	102	120	102	95	117	100	89	105	94	121	123	102	70,023
ColT22	72,129	248	162	153	179	158	141	162	147	139	153	138	133	142	126	158	122	136	129	132	133	113	133	68,892
Caseau2001	71,836	196	197	135	138	126	145	163	125	130	118	122	131	136	117	125	112	112	109	117	119	130	144	68,889
AbreuNP23	70,625	203	131	131	157	137	116	119	124	102	94	107	112	126	100	150	92	125	119	102	121	74	103	67,980
Caballero19	70,476	170	239	129	123	116	158	202	106	109	121	93	120	126	112	85	98	109	101	118	119	103	120	67,699
Akan2023	70,055	240	152	142	135	102	111	105	109	109	100	109	88	107	104	103	106	91	103	130	118	69	109	67,513
BlazewiczDP96	69,644	231	179	126	141	131	123	149	123	114	97	111	134	95	101	126	94	97	106	113	141	132	109	66,871
Godet21a	69,399	256	263	155	166	154	177	248	157	132	159	130	149	158	130	147	124	130	133	155	164	150	151	65,811
BajestaniB13	69,200	181	120	115	128	117	110	110	102	114	89	100	96	86	89	99	86	86	88	105	131	87	92	66,869
AbreuAPNM21	68,784	208	128	121	147	127	103	114	119	89	90	113	107	121	96	152	86	111	111	110	124	78	93	66,236
BidotVLB09	68,036	190	140	134	139	110	122	134	105	126	102	101	106	113	114	114	115	90	97	95	131	105	99	65,454
BeckF98	67,641	177	142	115	122	122	113	142	109	100	102	108	97	100	97	96	99	91	86	109	116	105	103	65,190
AlfieriGPS23	67,510	190	118	132	141	116	99	107	116	102	82	114	109	110	90	130	97	94	105	97	128	75	94	65,064
ArkhipovBL19	67,327	137	166	104	105	97	135	121	92	89	97	87	103	108	87	80	78	89	83	97	103	97	97	65,075
Artigues2011	67,246	136	156	102	98	109	127	146	99	91	75	89	122	100	84	95	83	76	87	87	104	109	81	64,990
Banaszak2014	66,962	155	124	96	97	109	105	123	97	105	87	81	93	88	97	94	106	84	97	88	104	85	94	64,753
BeckF00	65,934	146	167	108	105	110	117	156	99	106	93	84	107	91	92	92	94	76	76	79	112	117	100	63,607
BosiM2001	65,855	156	162	110	131	111	137	158	115	114	100	105	126	112	105	106	95	98	108	101	123	127	96	63,259
Brucker2002	65,845	196	180	132	138	130	152	156	119	120	100	106	129	129	101	115	93	108	102	119	145	102	108	63,065
Braune2022	64,929	146	165	125	133	128	131	136	115	116	112	104	118	118	105	100	103	109	102	110	109	103	125	62,316
BonninMNE24	64,836	172	159	113	122	112	119	130	104	98	110	99	112	106	99	131	99	101	95	109	128	115	119	62,284
BeckR03	64,030	156	132	131	127	115	119	134	111	129	93	100	103	90	107	97	106	72	85	87	132	109	93	61,602
BeckPS03	63,753	151	138	122	120	106	116	131	104	115	91	92	99	105	101	96	107	86	93	85	112	96	98	61,389
ChenGPSH10	63,585	163	164	101	109	121	127	149	110	120	96	96	113	97	102	106	102	82	94	92	115	116	110	61,100
Bit-Monnot23	63,541	135	154	106	99	120	129	177	105	94	103	98	121	105	86	105	91	86	89	95	101	103	98	61,141
AntuoriHHEN20	63,521	134	121	104	100	82	95	113	109	94	86	99	90	78	82	83	87	68	74	77	97	91	82	61,475
Benedetti2008	63,222	138	140	102	103	103	111	130	98	102	94	88	94	97	95	81	96	88	95	95	97	92	107	60,976
Other		99,781	73,992	75,041	74,421	72,856	72,127	70,427	71,121	68,913	68,759	68,134	67,198	66,662	64,966	64,183	63,672	63,504	63,074	62,728	61,363	62,057	61,361	

Table 11: Heat Map based on 100*Cosine Similarity of Concepts (high = similar)

From/To	Total	ZeballosM09	ZeballosH05	abs-2312-13682	abs-1901-07914	VilimLS15	ZhangYW21	Xujun2009	ZouZ20	ZeballosQH10	Zhang2005	abs-1902-09244	Wolf05	ZhangBB22	abs-2211-14492	ZeballosNH11	abs-2305-19888	abs-2306-05747	ZibranR11a	WatsonB08	ZhouGL15	VilimBC05	VilimBC04	Other
Total		52,877	52,828	51,702	51,446	51,128	51,094	50,815	50,684	50,672	50,598	50,389	49,969	49,822	49,812	49,792	49,605	49,596	49,579	49,529	49,013	48,937	48,892	
Banaszak2014	52,809	77	76	59	67	65	63	76	62	66	66	56	68	60	59	66	57	57	60	64	65	67	66	51,387
Banaszak2008	52,493	80	77	60	70	64	59	80	59	70	67	56	71	59	62	66	56	59	62	67	63	67	66	51,053
Bartak02a	52,136	62	66	60	65	70	61	68	59	62	70	57	66	61	59	59	53	57	50	63	56	70	71	50,771
BartakSR08	52,001	60	66	57	60	68	63	70	56	59	80	58	70	71	63	60	56	59	52	67	65	76	75	50,590
AstrandJZ20	50,973	61	63	61	56	67	67	67	53	59	57	66	62	68	57	59	62	64	52	67	67	68	67	49,603
AfsarVPG23	50,966	62	65	54	53	63	74	56	59	68	52	69	62	61	69	58	59	67	50	69	60	58	60	49,618
BeckPS03	50,891	73	78	57	64	73	68	72	55	70	70	73	74	66	65	74	60	64	49	73	64	71	72	49,406
ArkhipovBL19	50,247	54	54	51	53	80	65	55	49	57	63	59	71	64	54	54	59	55	41	60	54	63	62	48,970
AstrandJZ18	50,005	67	66	69	69	62	52	69	56	64	54	52	60	53	51	53	55	51	64	56	56	59	57	48,710
Benedetti2008	49,704	66	69	60	61	68	64	71	59	65	75	60	78	61	60	64	60	61	50	64	64	70	72	48,282
AngelsmarkJ00	49,447	63	53	48	60	58	48	64	50	49	68	39	60	51	52	56	44	47	54	56	54	53	52	48,268
ArtiguesLH13	49,370	68	71	58	52	62	49	66	57	65	68	61	63	53	56	71	58	49	59	52	57	60	60	48,055
Beck07	49,339	64	64	56	56	73	71	73	55	58	64	64	68	73	67	61	52	68	60	85	60	68	74	47,905
Astrand0F21	49,255	57	64	64	64	65	68	59	49	59	50	56	59	66	55	51	59	63	46	64	54	63	60	47,960
AalianPG23	48,713	62	59	73	59	59	54	63	56	59	47	58	56	52	44	48	61	56	61	55	50	56	56	47,469
AbidinK20	48,687	55	55	56	50	52	58	42	70	60	41	56	45	51	49	56	51	46	64	51	46	51	45	47,537
Astrand2020	48,602	57	70	64	62	59	67	66	53	62	54	57	64	61	51	54	59	58	53	61	53	64	62	47,291
BeckDDF98	48,542	72	73	57	63	59	63	67	55	67	73	67	61	58	60	71	52	57	56	62	58	65	65	47,161
BeckFW11	48,211	61	62	63	60	74	72	67	47	63	59	62	70	75	72	55	62	77	53	93	62	65	70	46,767
Bartak02	48,168	67	59	53	59	60	47	69	55	53	70	45	59	51	49	60	44	44	56	51	51	65	64	46,937
Alaka21	48,070	53	60	56	57	52	63	53	68	60	47	53	51	53	49	46	55	48	52	48	54	54	47	46,891
AwadMDMT22	47,947	61	66	53	47	61	65	55	58	66	59	68	68	57	61	71	66	58	51	58	57	60	57	46,624
Balduccini2017	47,800	58	55	52	58	61	48	62	54	47	61	47	54	49	54	54	46	50	50	58	55	55	54	46,618
Artigues2011	47,463	53	54	44	51	71	63	57	42	52	62	55	63	72	55	52	47	53	38	63	54	70	69	46,223
BartakSR10	47,462	58	64	47	60	62	60	58	51	62	77	56	70	68	61	62	55	54	44	59	63	69	68	46,134
AkramNHRSA23	47,414	54	56	57	63	55	62	56	57	55	52	47	57	50	63	43	59	58	57	59	58	46	45	46,205
Astrand21	47,396	54	57	53	49	61	61	54	51	55	52	63	55	61	56	55	62	57	47	57	66	61	59	46,150
Adelgren2023	47,124	52	53	56	54	54	57	55	46	51	54	48	60	57	53	52	65	53	41	56	56	51	50	45,950
AlesioBNG15	47,083	55	53	51	56	54	60	50	66	56	54	48	58	51	53	54	56	52	64	55	56	48	48	45,885
AlakaP23	47,019	52	55	51	61	51	63	53	67	58	47	51	45	50	45	49	51	43	52	45	49	51	44	45,886
Beck99	46,878	60	62	51	57	62	64	57	55	60	71	59	65	56	57	60	55	56	50	63	55	69	68	45,566
BockmayrP06	46,839	70	65	73	70	65	49	62	56	64	63	55	60	54	54	58	60	55	61	59	60	58	55	45,513
Bocewicz2009	46,797	70	72	54	65	64	59	71	59	61	67	54	74	60	55	66	54	56	59	64	58	71	71	45,413
Beck06	46,644	61	65	57	59	64	63	70	40	56	61	61	65	67	67	60	49	66	47	84	64	61	66	45,291
BeckF00a	46,537	66	61	49	56	64	54	69	52	56	73	49	70	56	52	60	46	51	52	63	55	80	80	45,223
BeckF98	46,403	55	62	46	60	61	68	57	51	58	70	59	66	55	59	55	55	58	42	60	51	66	69	45,120
BenderWS21	46,218	68	69	70	68	65	66	74	61	65	56	63	65	53	52	57	70	59	63	63	56	58	58	44,839
BeniniLMR11	46,199	65	66	62	61	65	56	61	65	64	58	57	62	56	52	63	58	53	58	56	49	60	59	44,893
AbreuN22	46,026	48	58	56	48	59	66	45	50	58	39	62	54	58	64	50	70	63	41	62	65	51	51	44,808
Alesio2013	45,998	57	56	52	57	52	55	50	57	58	58	45	64	51	52	53	57	53	61	55	56	47	47	44,805
CarchraeB09	45,923	69	68	71	67	80	70	71	53	64	63	65	73	75	71	65	61	76	54	85	62	67	70	44,423
BeckR03	45,874	64	70	48	46	67	65	67	59	67	66	71	61	61	62	74	45	56	58	66	53	63	65	44,520
Other		50,286	50,171	49,313	48,973	48,477	48,524	48,188	48,352	48,144	48,040	47,982	47,322	47,337	47,411	47,337	47,244	47,209	47,345	46,911	46,602	46,342	46,316	


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
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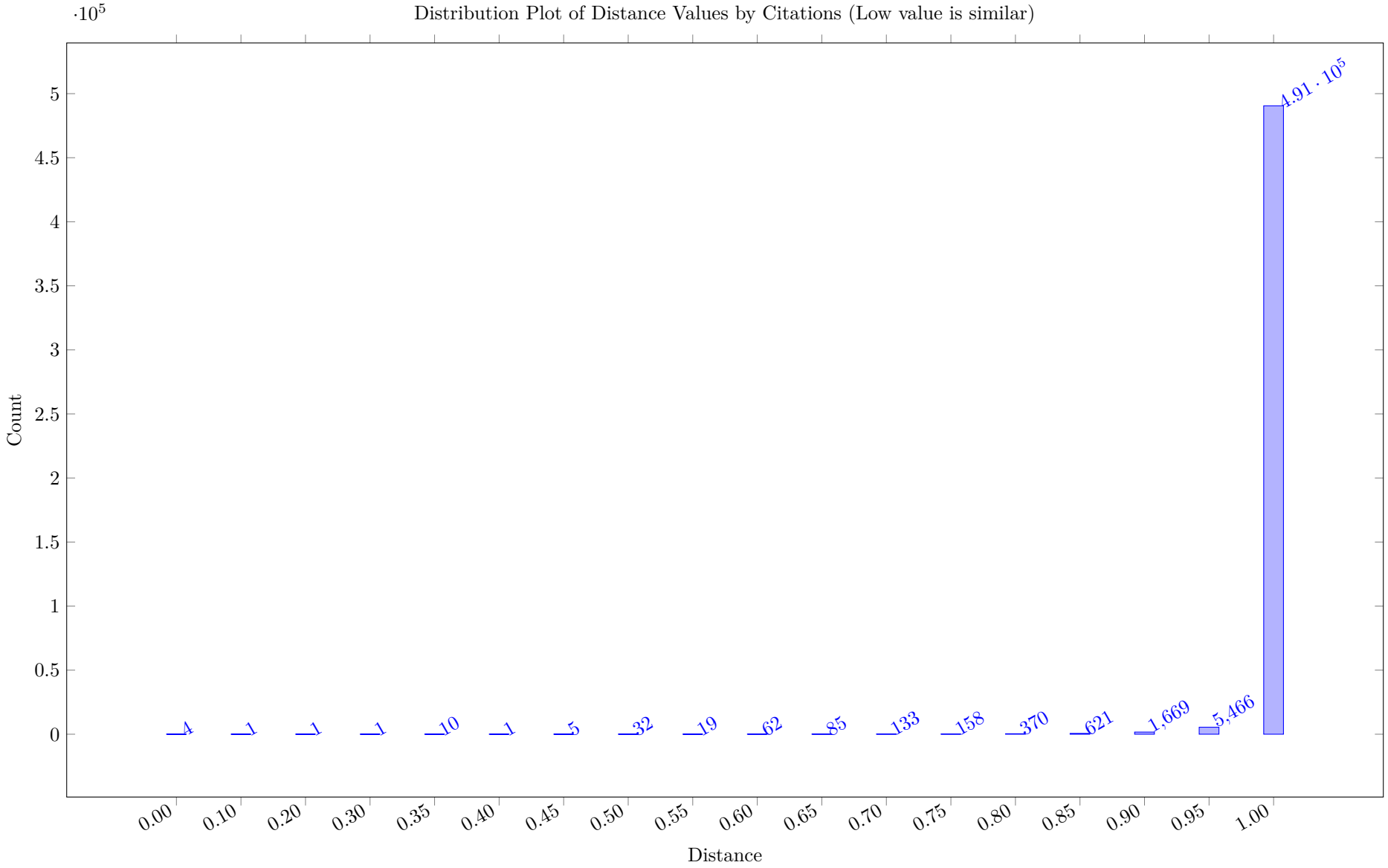
2,788
8,727
24,050
$4.63 \cdot 10^5$


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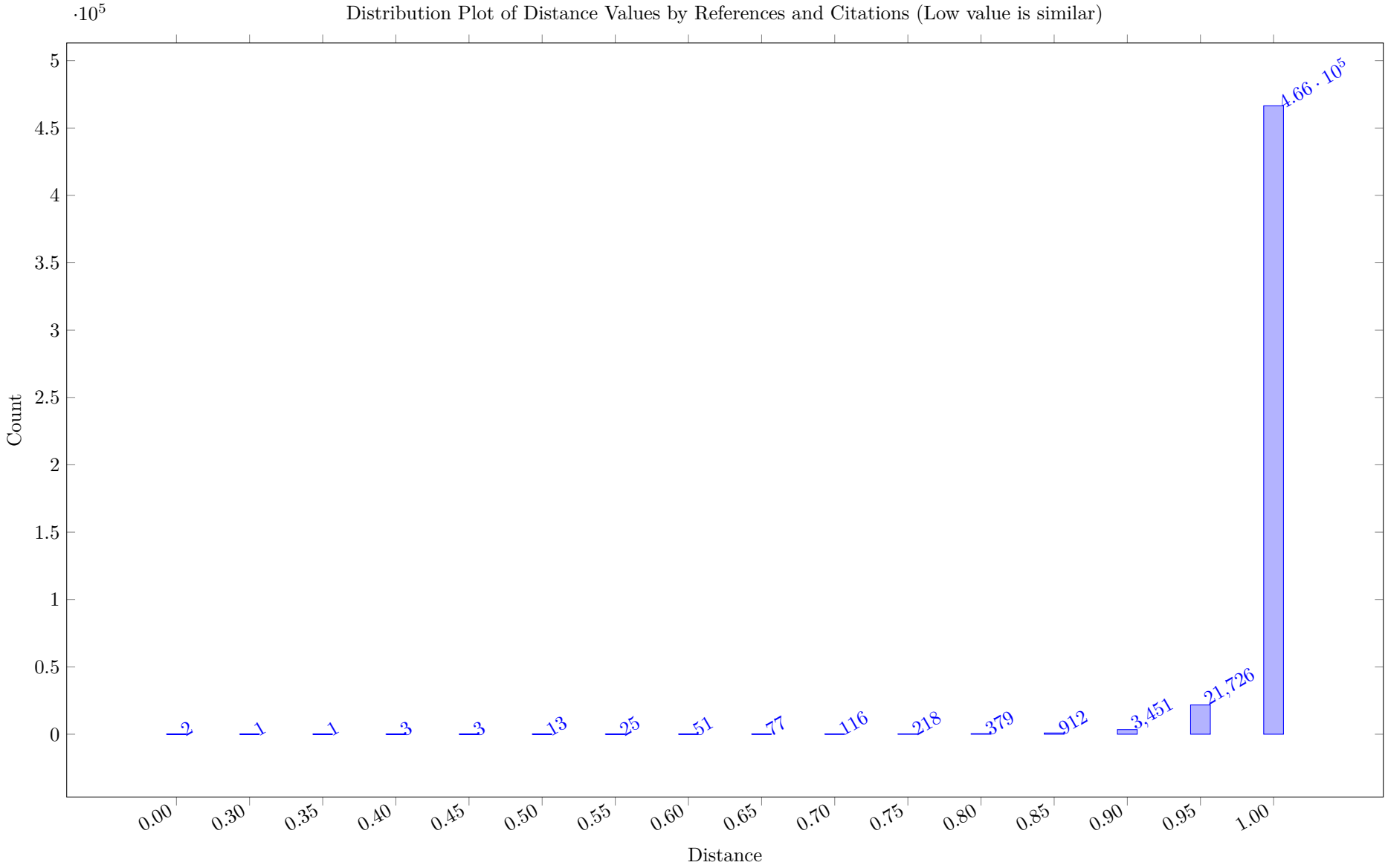
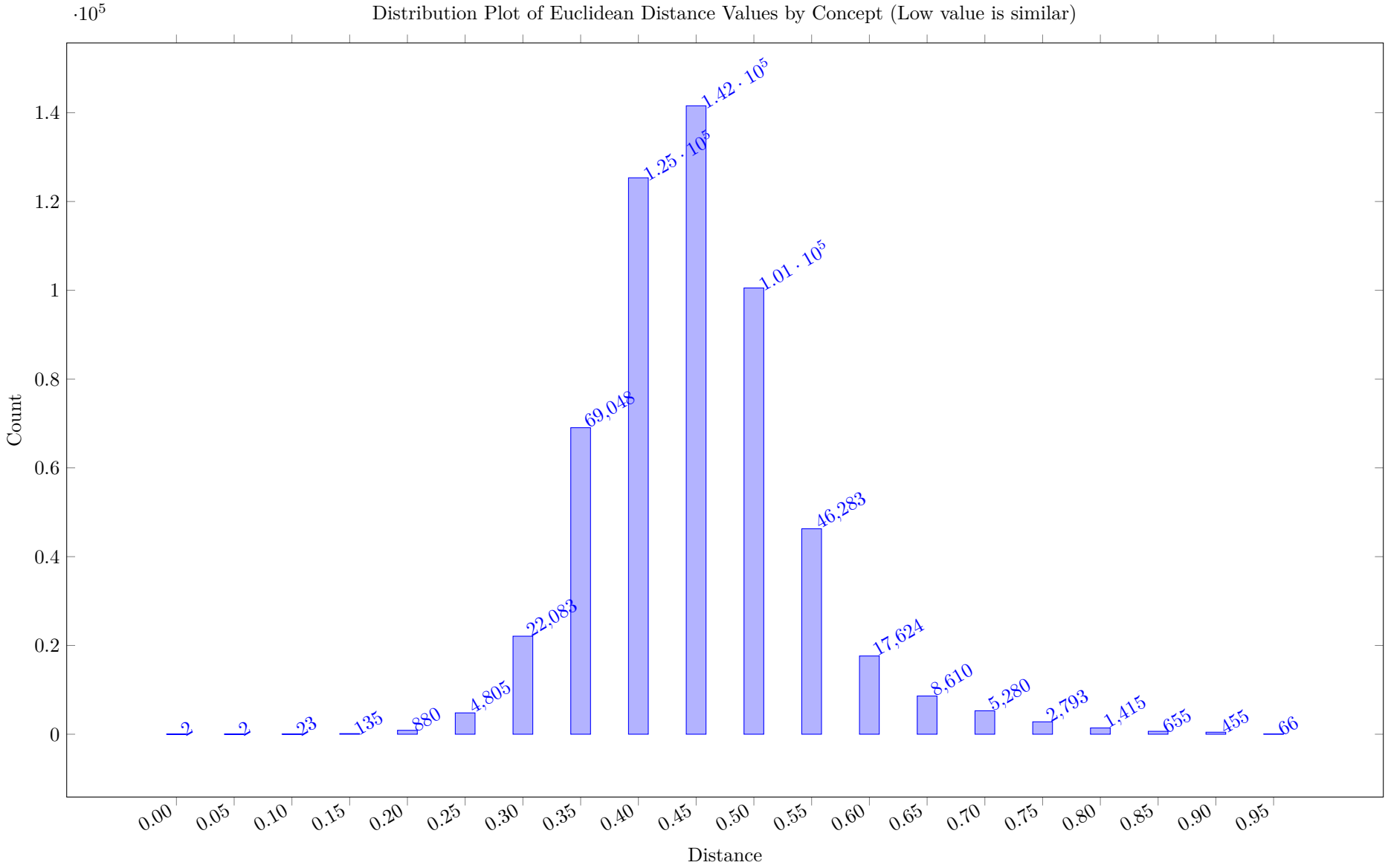
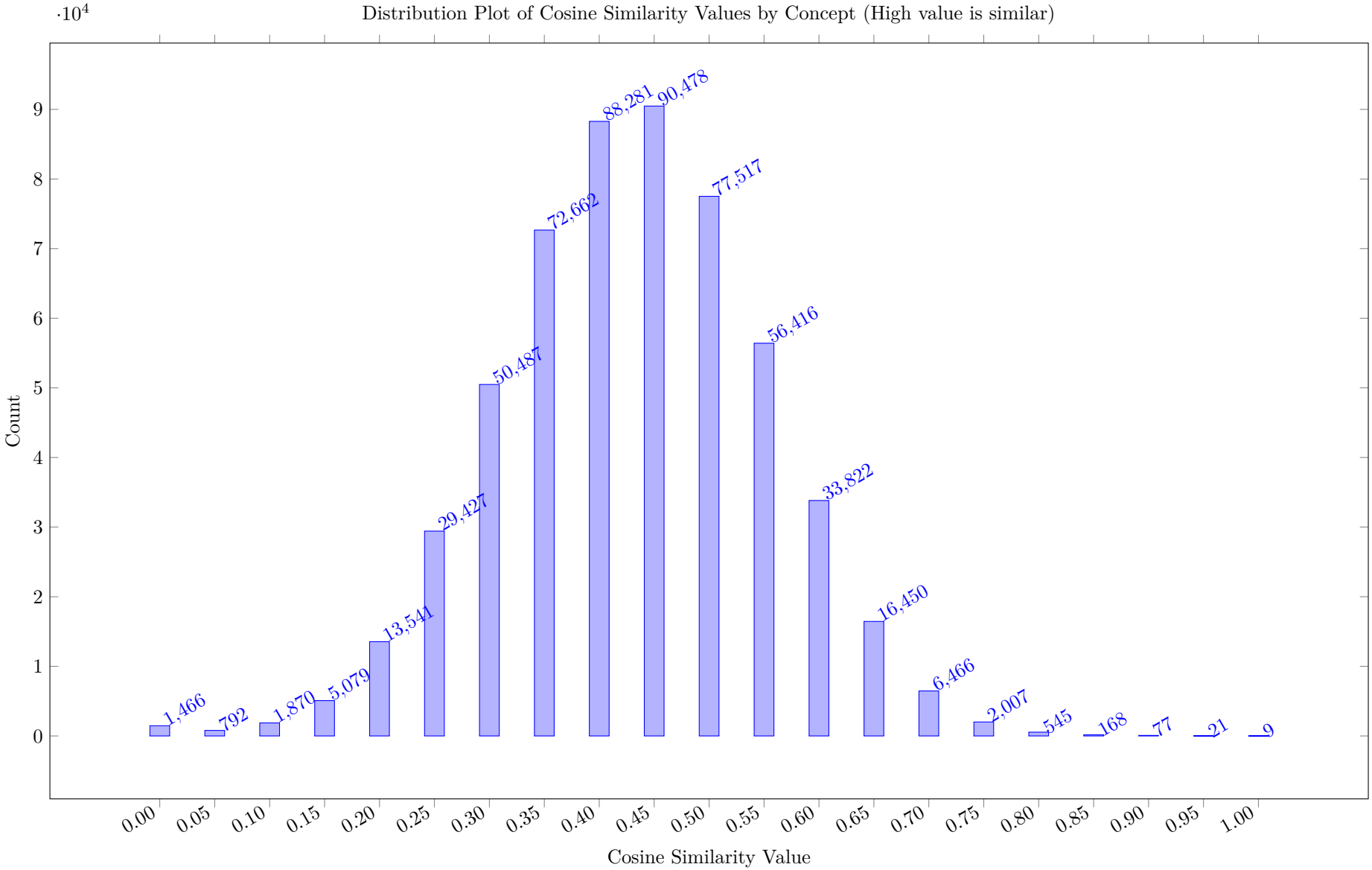
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
4
1
1
1
10
1
5
32
19
62
85
133
158
370
621
1,669
5,466
$4.91 \cdot 10^5$
0.00
0.10
0.20
0.30
0.35
0.40
0.45
0.50
0.55
0.60
0.65
0.70
0.75
0.80
0.85
0.90
0.95
1.00

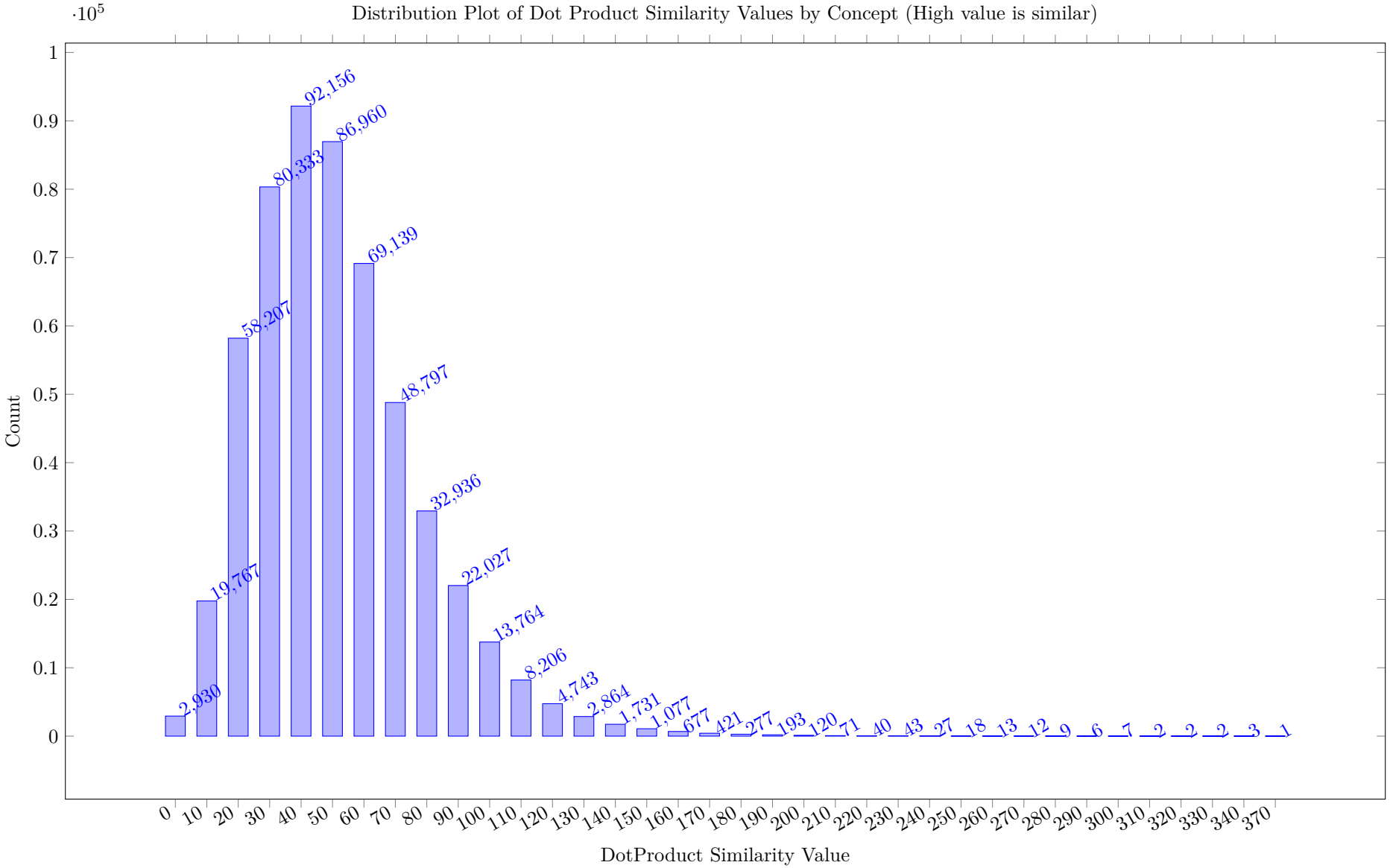


The similarity by concept uses the Euclidean distance between the feature vectors for two works. We translate the MatchLevel for each Concept into a linear

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
0
0.2
0.4
0.6
0.8
1
1.2
1.4
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
2
2
23
135
880
4,805
22,083
69,048
$1.25 \cdot 10^5$
$1.42 \cdot 10^5$
$1.01 \cdot 10^5$
46,283
17,624
8,610
5,280
2,793
1,415
655
455
66

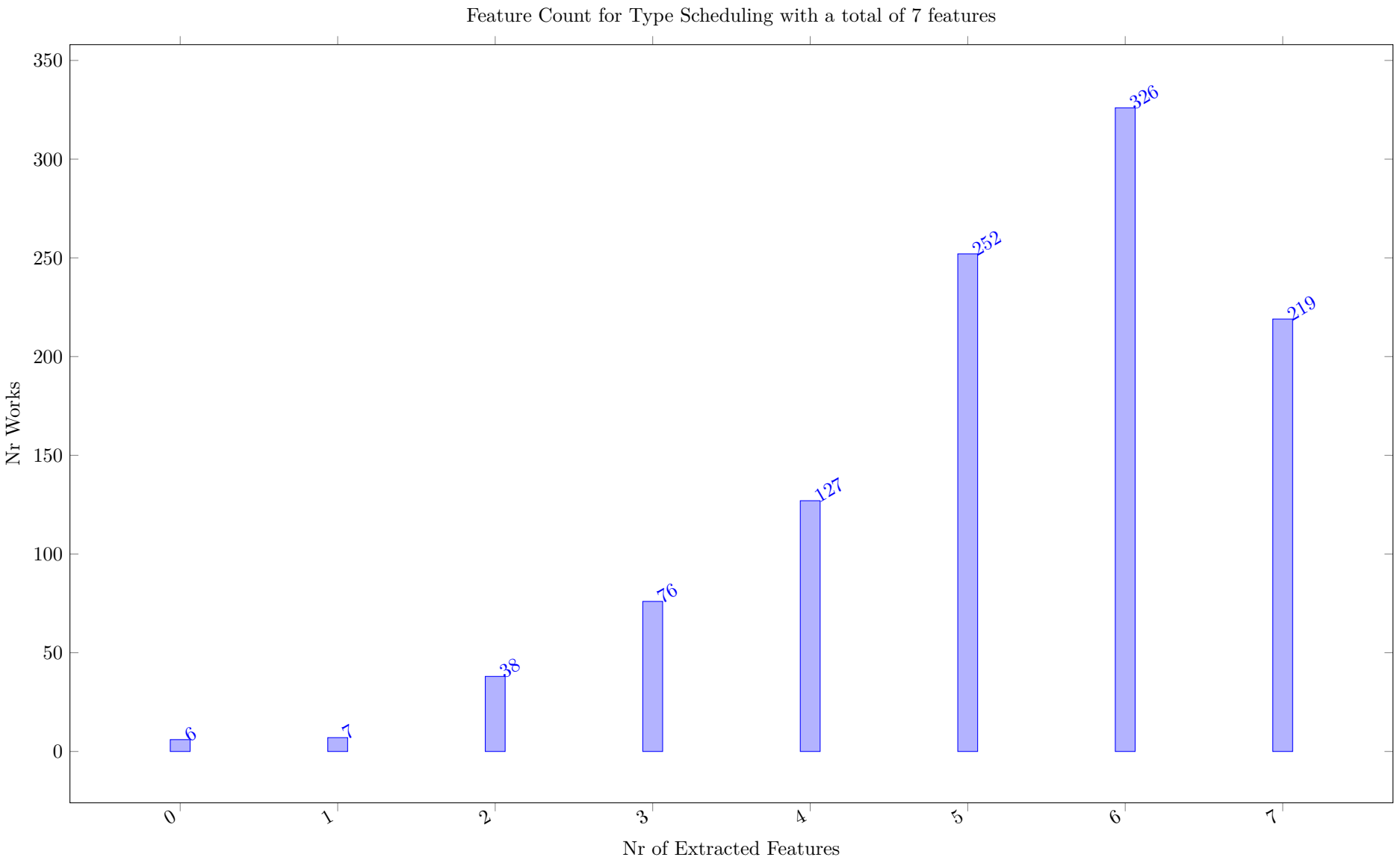

Distribution Plot of Cosine Similarity Values by Concept (High value is similar)
$\cdot 10^4$
Count
Cosine Similarity Value
0 1 2 3 4 5 6 7 8 9
0.00 0.05 0.10 0.15 0.20 0.25 0.30 0.35 0.40 0.45 0.50 0.55 0.60 0.65 0.70 0.75 0.80 0.85 0.90 0.95 1.00
1,466
792
1,870
5,079
13,541
29,427
50,487
72,662
88,281
90,478
77,517
56,416
33,822
16,450
6,466
2,007
545
168
77
21
9

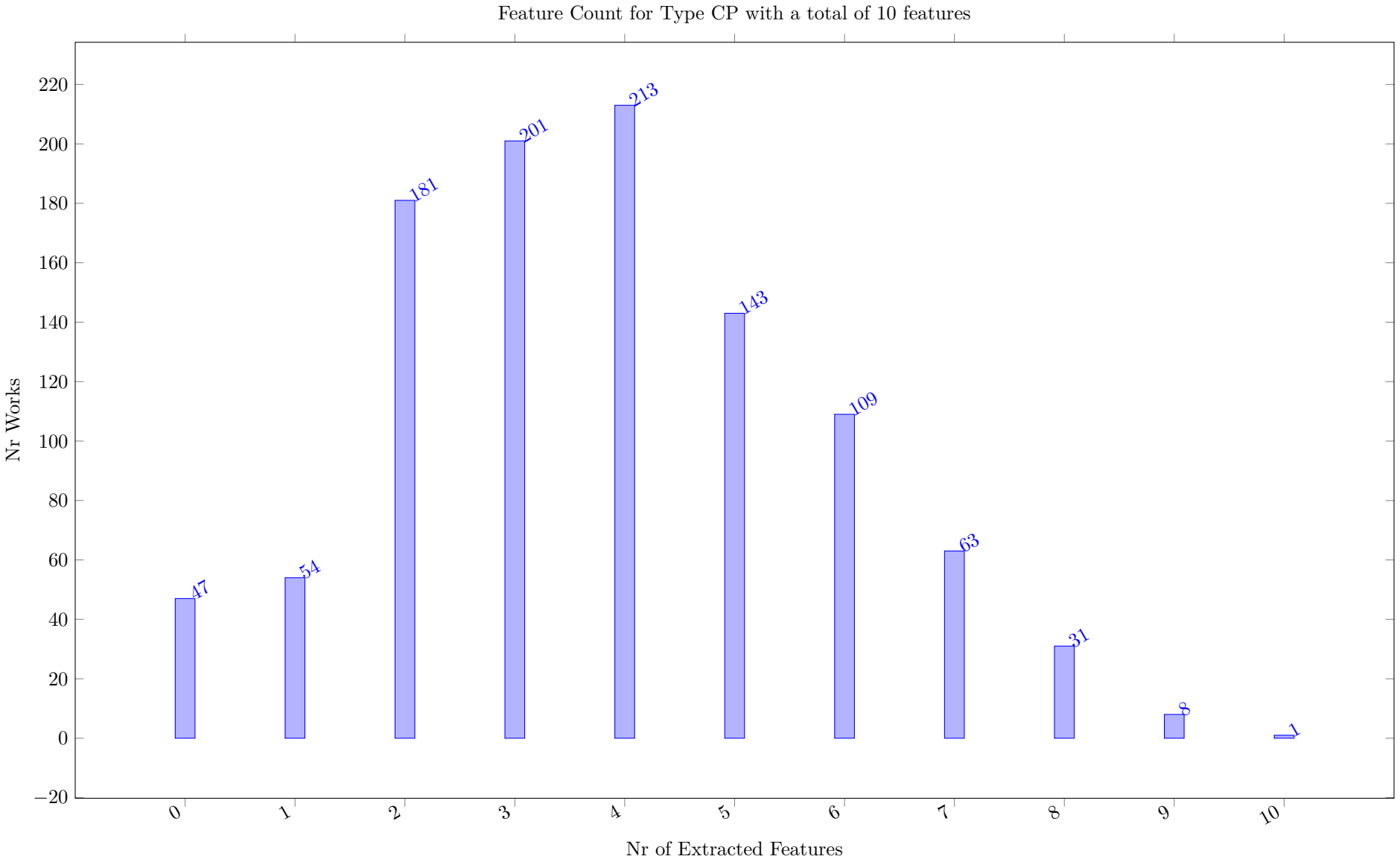

Distribution Plot of Dot Product Similarity Values by Concept (High value is similar)
$\cdot 10^5$
Count
DotProduct Similarity Value
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
2,930
19,767
58,207
80,333
92,156
86,960
69,139
48,797
32,936
22,027
13,764
8,206
4,743
2,864
1,731
1,077
677
421
277
193
120
71
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

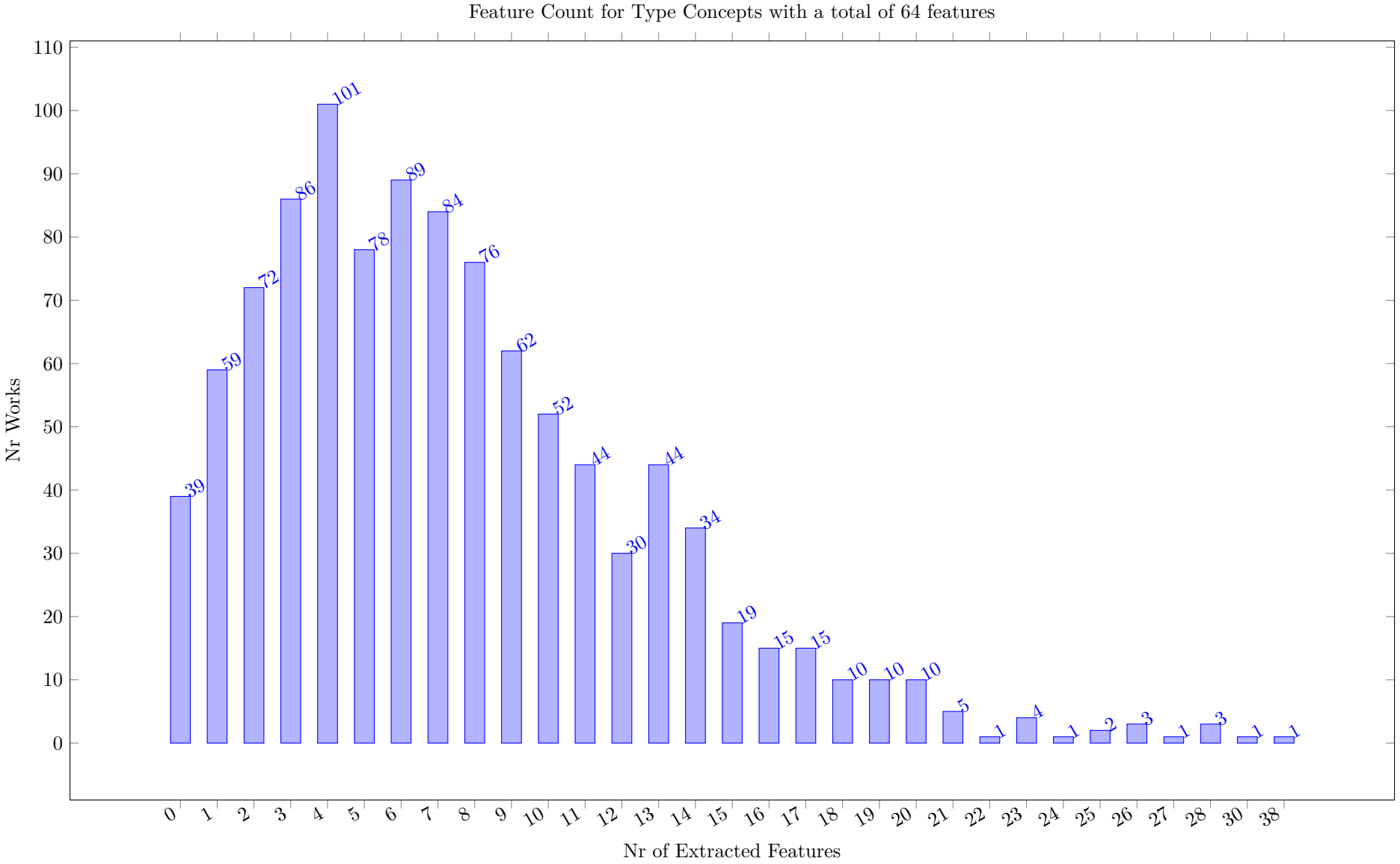
12 Concept Distribution

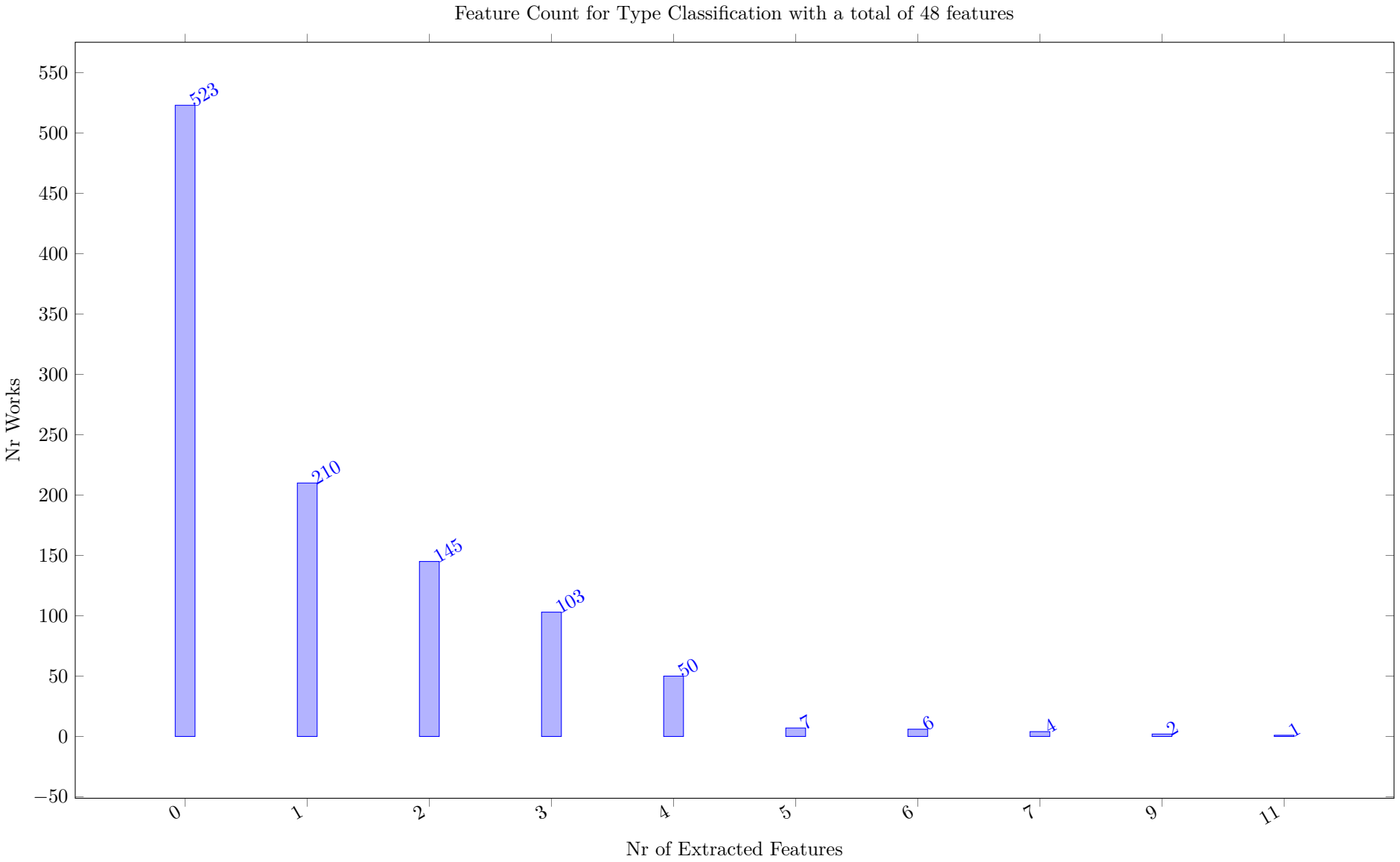
For each concept type, we count how many features are extracted by the individual works that do have a local copy, e.g. for which we can extract features. We can compare the number of features extracted to the number of concepts of a given type, which is stated in the title of the diagram.

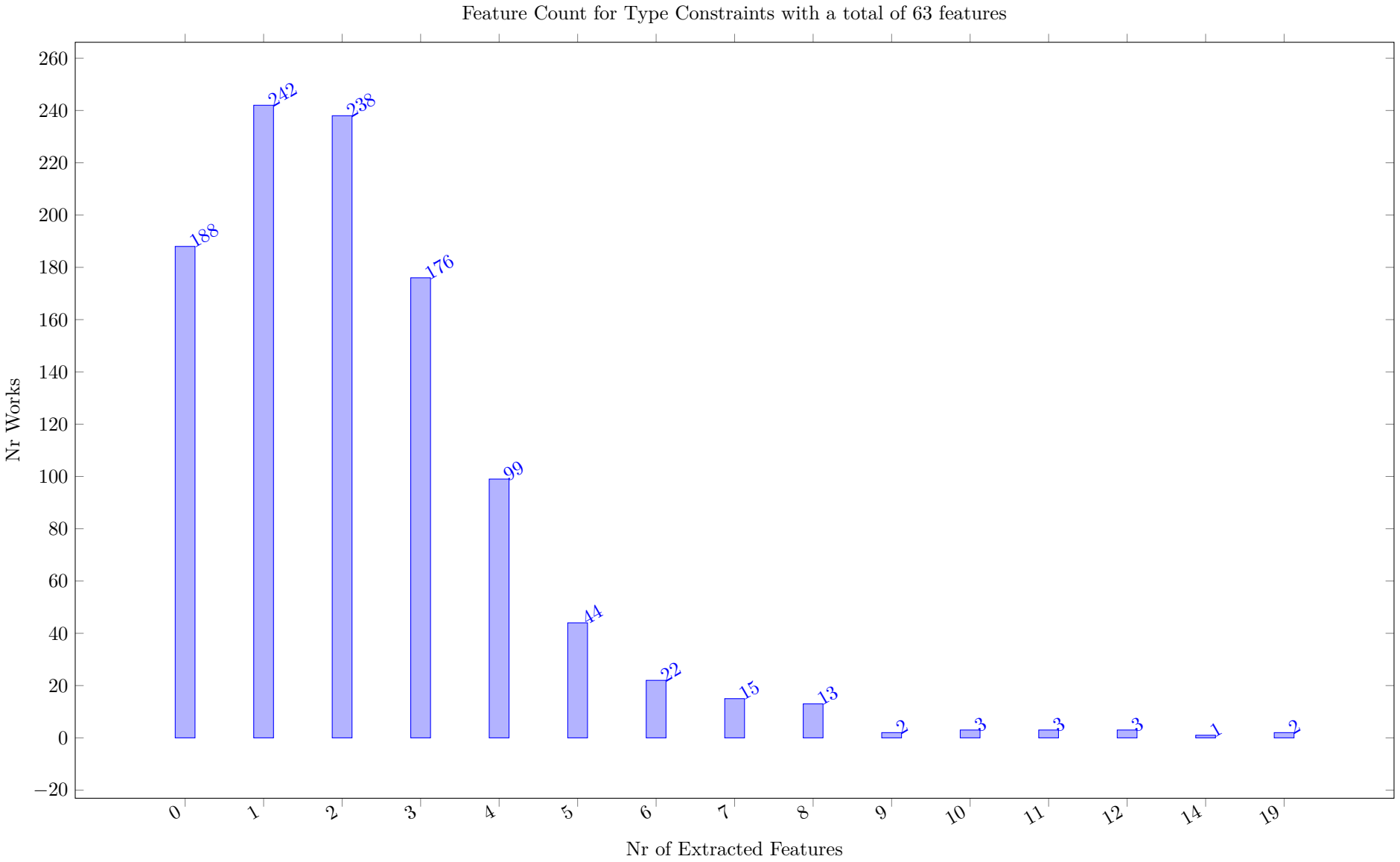
A high count indicates that a work covers many of the concepts of the given type, a low count might mean that our ontology does not have relevant concepts for that work.

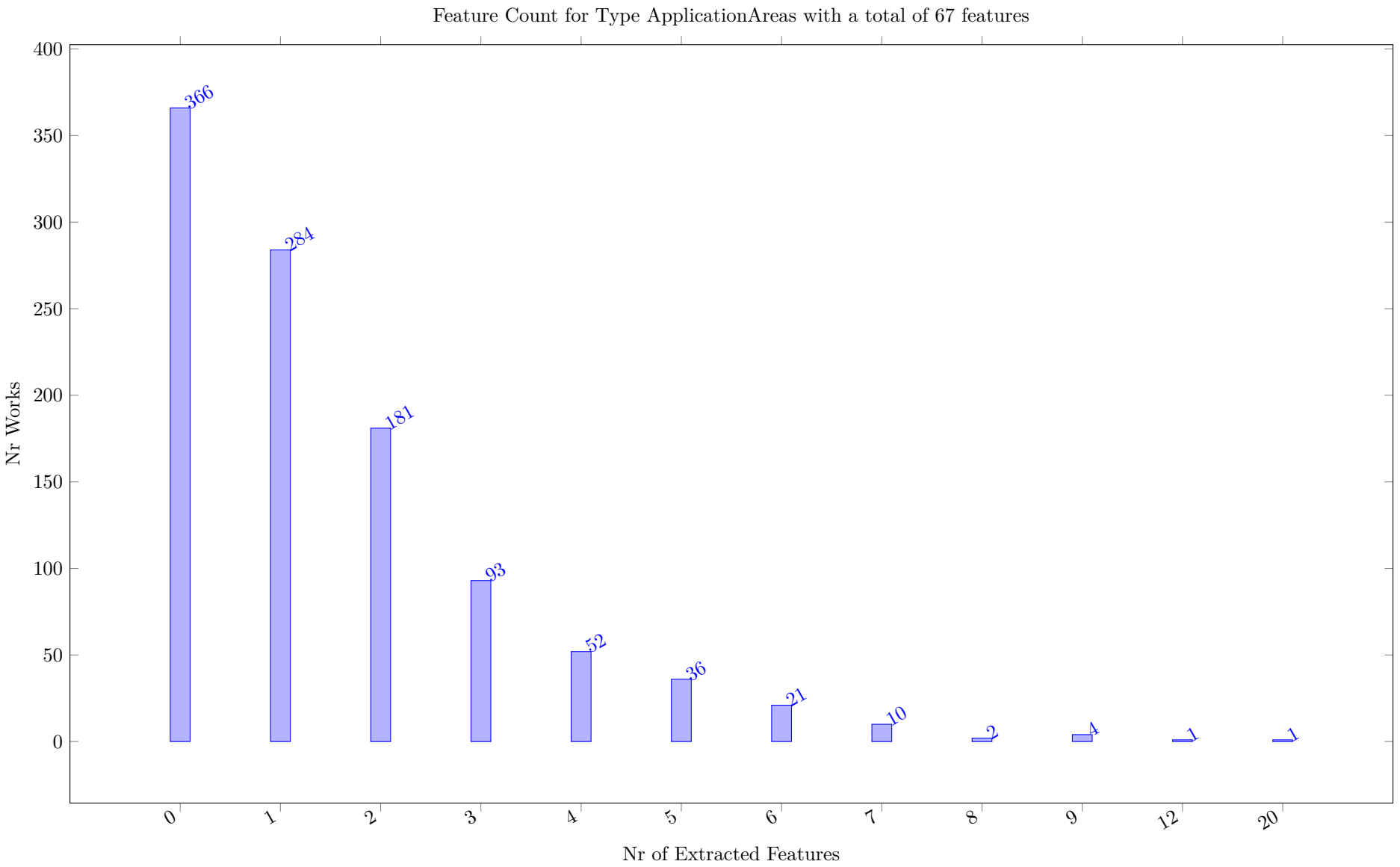

Feature Count for Type Scheduling with a total of 7 features
Nr Works
Nr of Extracted Features
0
50
100
150
200
250
300
350
0
1
2
3
4
5
6
7
6
7
38
76
127
252
326
219

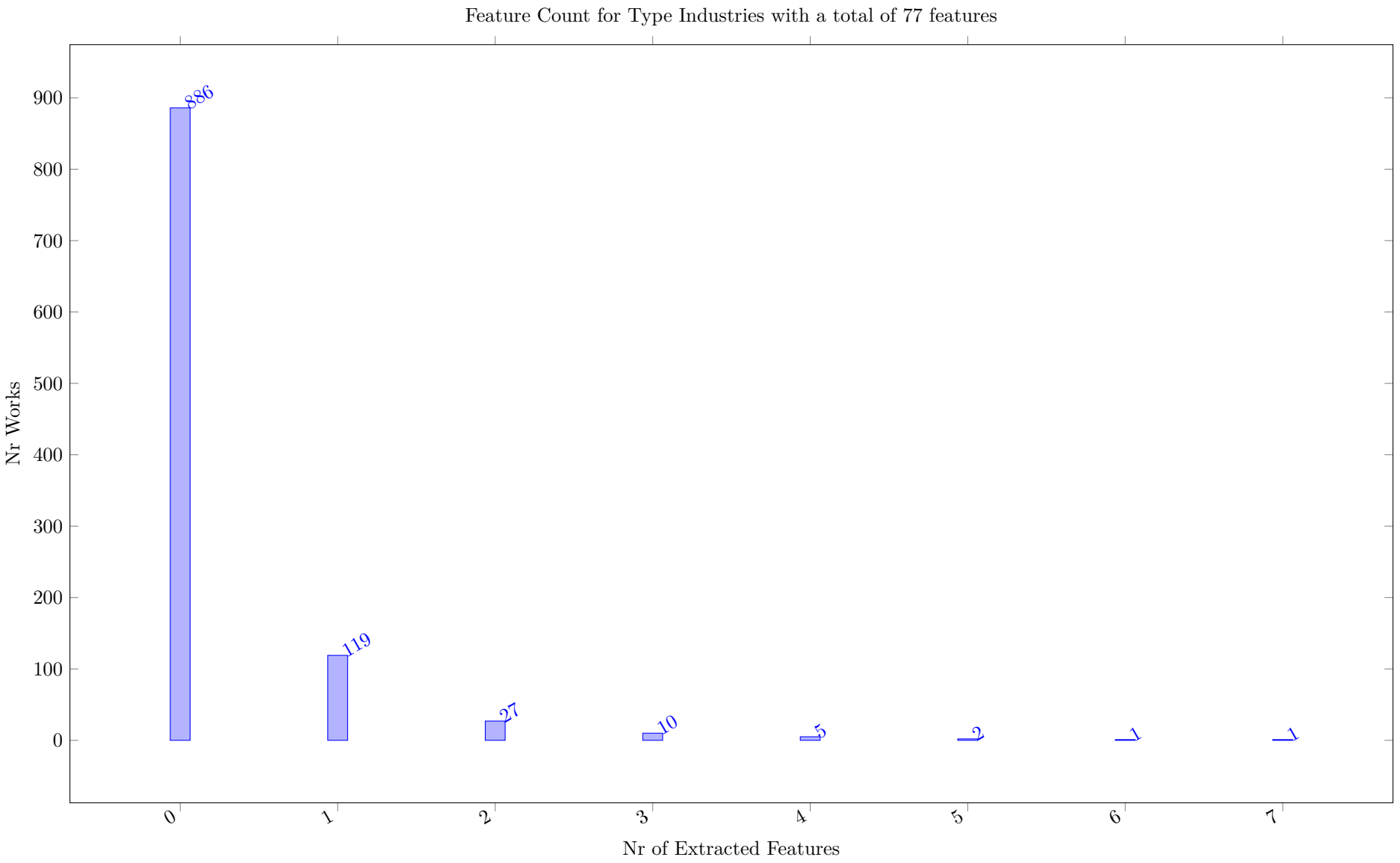

Feature Count for Type CP with a total of 10 features
Nr Works
Nr of Extracted Features
220
200
180
160
140
120
100
80
60
40
20
0
−20
0
1
2
3
4
5
6
7
8
9
10
47
54
181
201
213
143
109
63
31
8
1

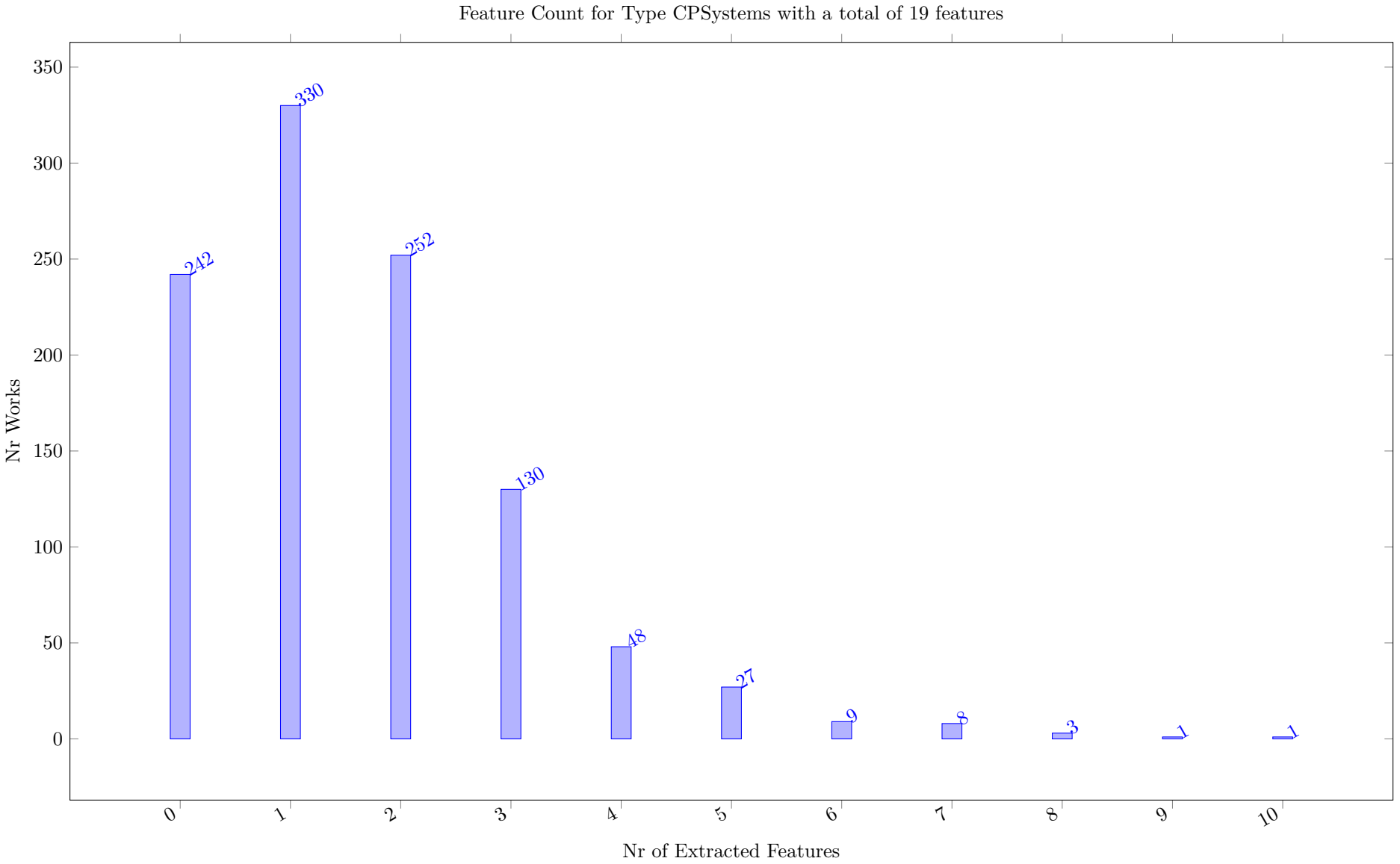

Feature Count for Type Concepts with a total of 64 features
Nr Works
Nr of Extracted Features
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 30 38
39 59 72 86 101 78 89 84 76 62 52 44 30 44 34 19 15 15 10 10 10 5 1 4 1 2 3 1 3 1 1

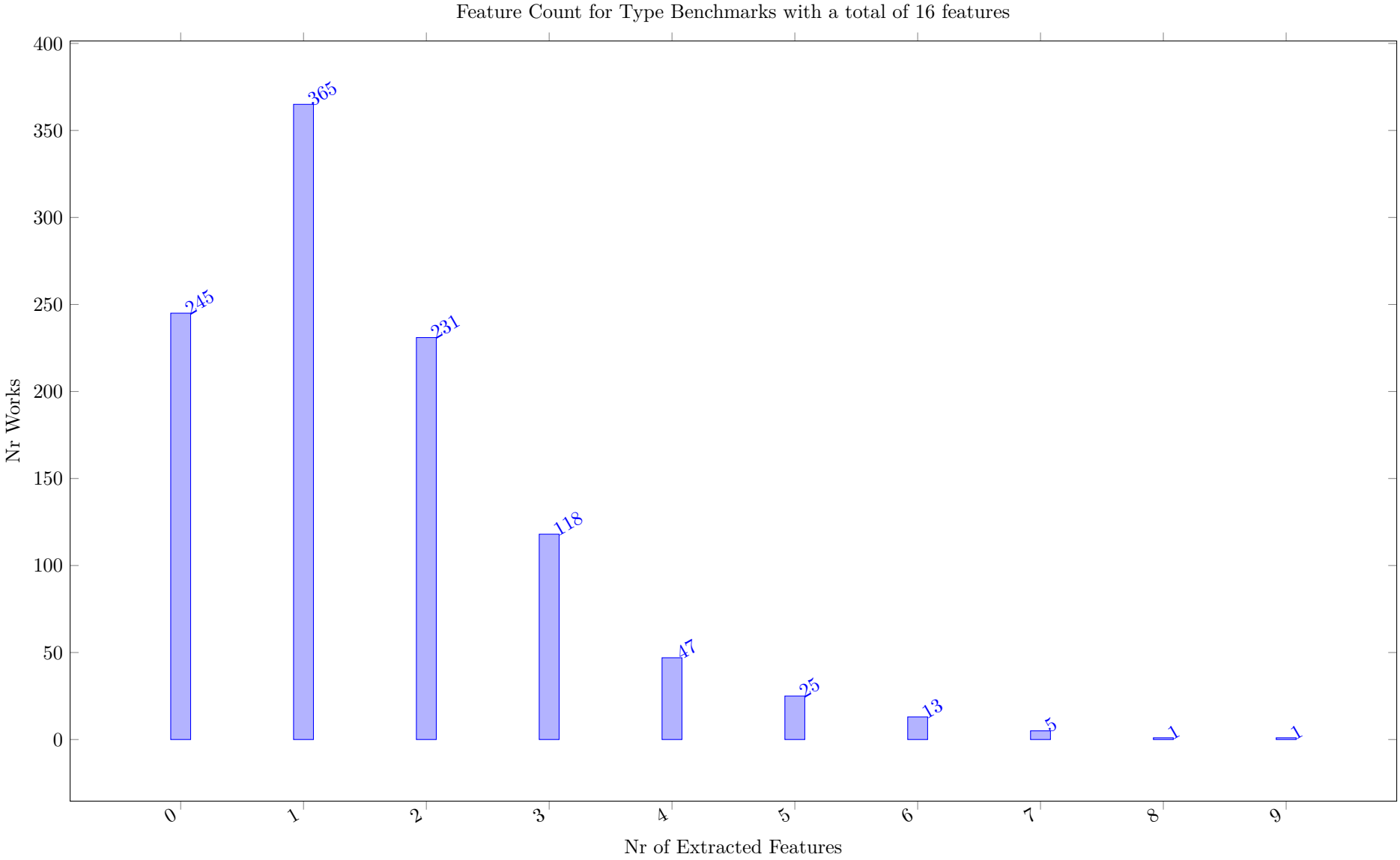

Feature Count for Type Classification with a total of 48 features
Nr Works
550
500
450
400
350
300
250
200
150
100
50
0
−50
523
210
145
103
50
7
6
4
2
1
0
1
2
3
4
5
6
7
9
11
Nr of Extracted Features

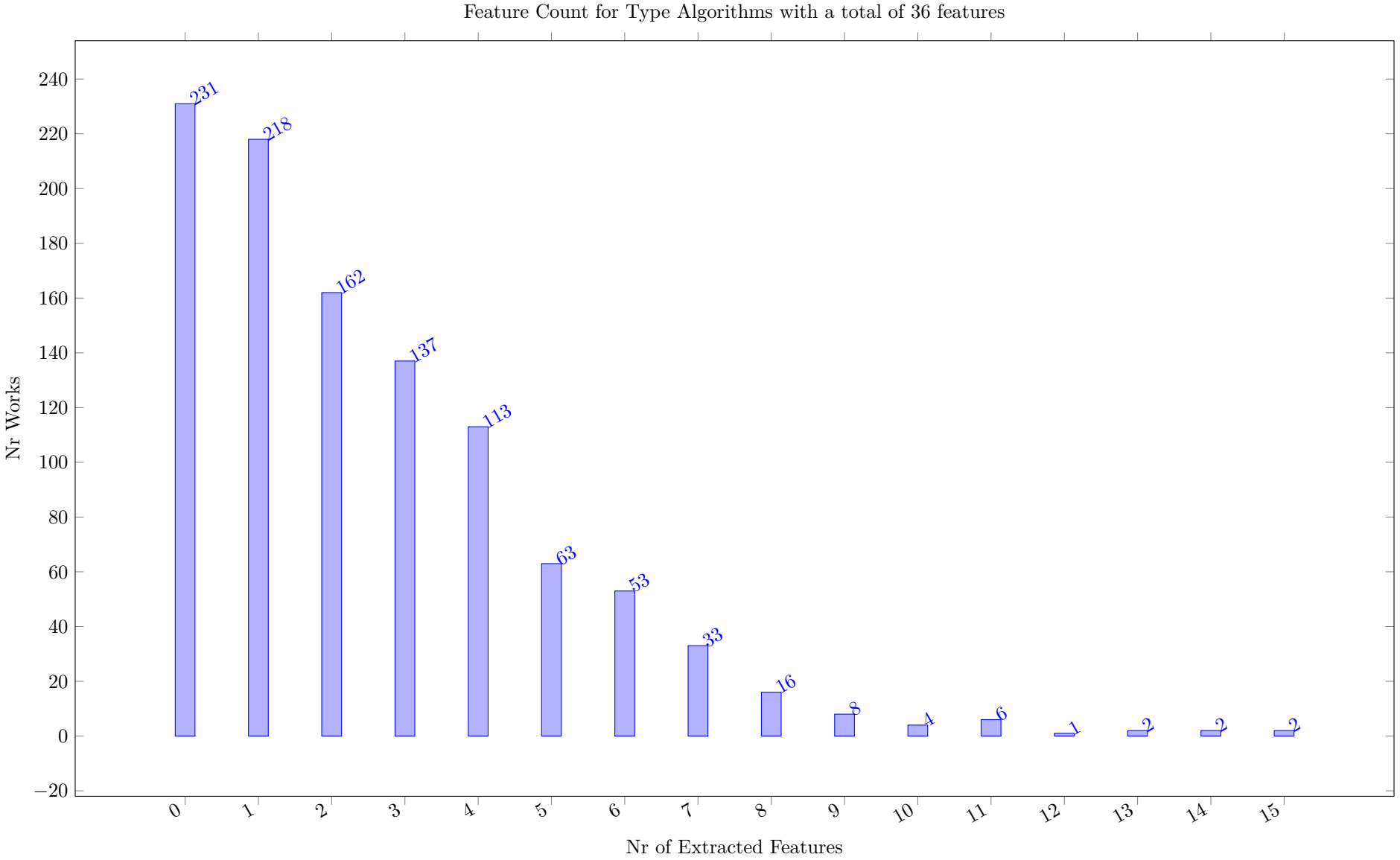

Feature Count for Type Constraints with a total of 63 features
Nr Works
Nr of Extracted Features
260
240
220
200
180
160
140
120
100
80
60
40
20
0
−20
188
242
238
176
99
44
22
15
13
2
3
3
3
1
2
0
1
2
3
4
5
6
7
8
9
10
11
12
14
19


Feature Count for Type ApplicationAreas with a total of 67 features
Nr Works
Nr of Extracted Features
400
350
300
250
200
150
100
50
0
366
284
181
93
52
36
21
10
2
4
1
1
0
1
2
3
4
5
6
7
8
9
12
20


Feature Count for Type Industries with a total of 77 features
Nr Works
900
800
700
600
500
400
300
200
100
0
886
119
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
Nr of Extracted Features
0
50
100
150
200
250
300
350
0
1
2
3
4
5
6
7
8
9
10
242
330
252
130
48
27
9
8
3
1
1


Feature Count for Type Benchmarks with a total of 16 features
Nr Works
Nr of Extracted Features
400
350
300
250
200
150
100
50
0
245
365
231
118
47
25
13
5
1
1
0
1
2
3
4
5
6
7
8
9

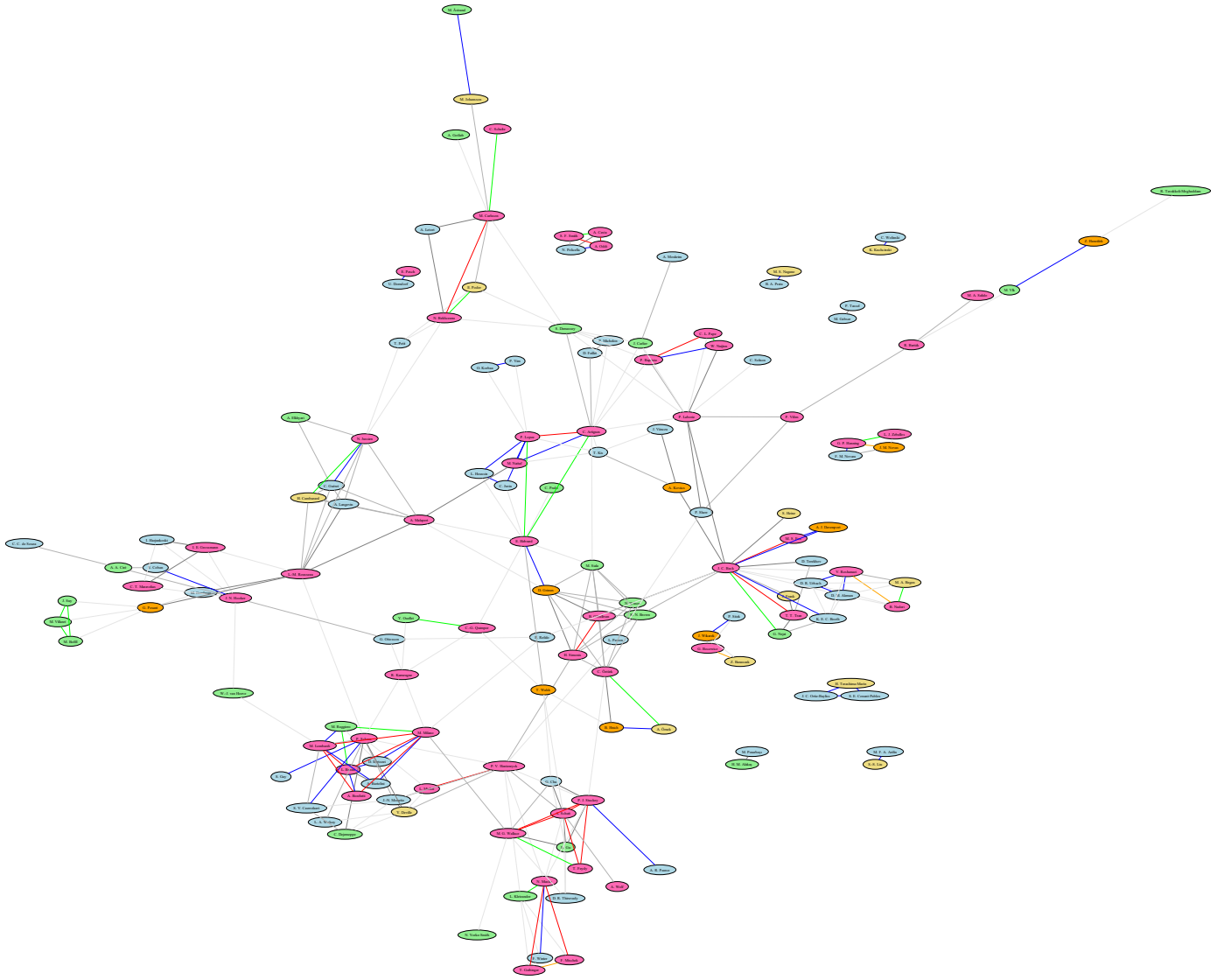

Feature Count for Type Algorithms with a total of 36 features
Nr Works
Nr of Extracted Features
240
220
200
180
160
140
120
100
80
60
40
20
0
−20
231
218
162
137
113
63
53
33
16
8
4
6
1
2
2
2
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15

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 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 any 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 with the data sources currently used.

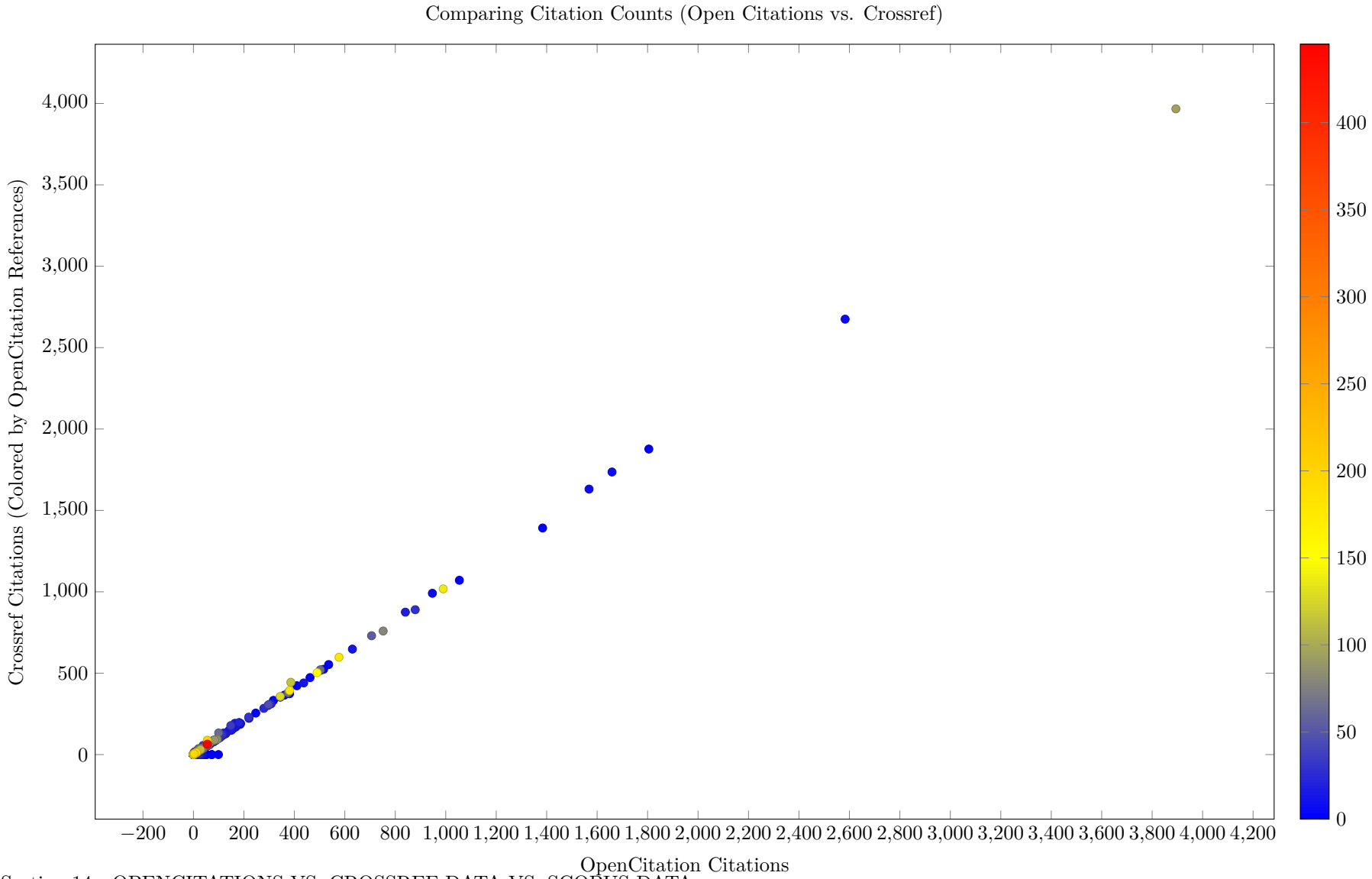
The plots can be made with different layout tools in graphviz, it seems that fdp produces the most consistent visually attractive plots for this type of display. This probably needs more work on parameter settings to be fully automated.

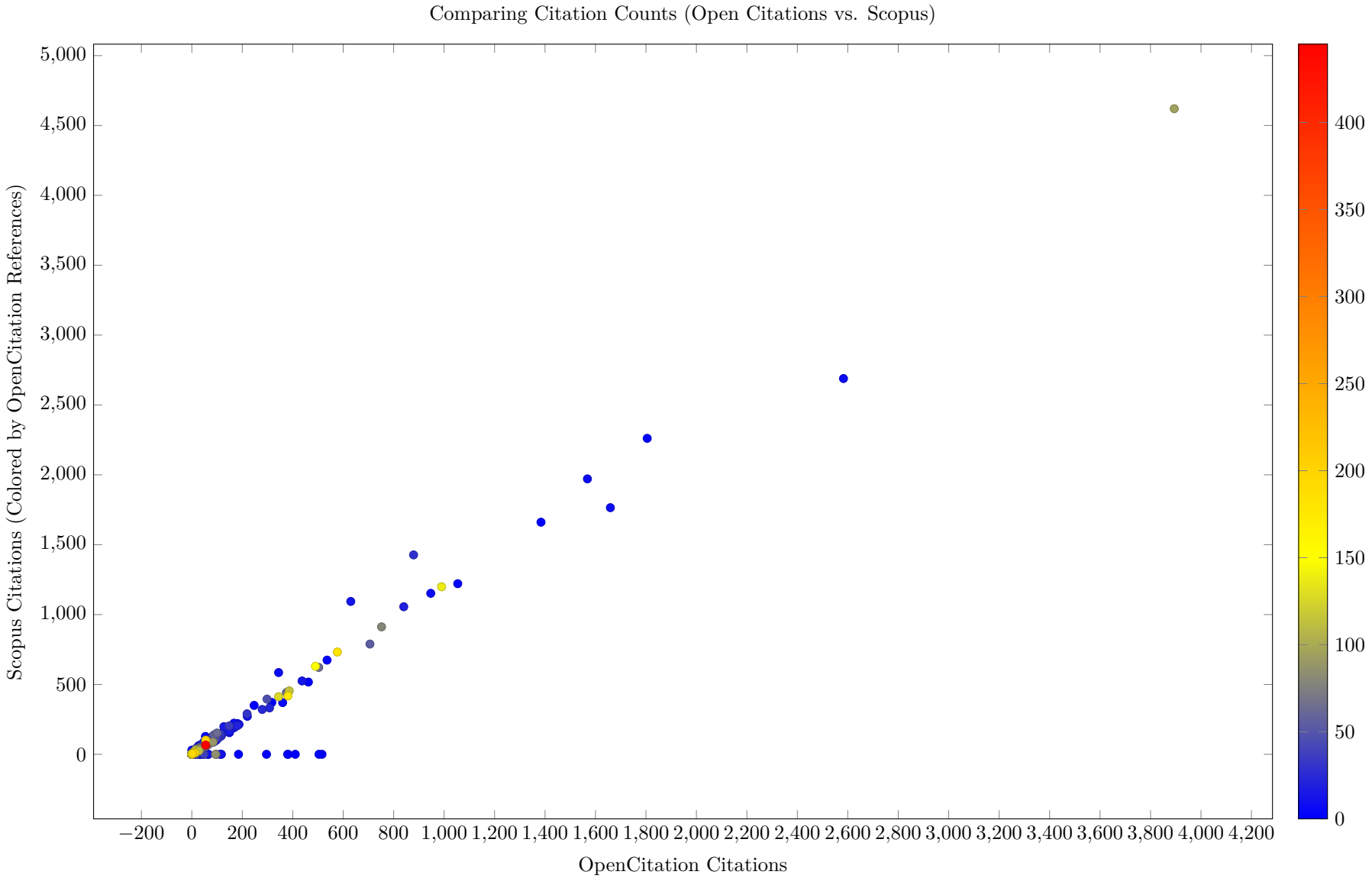
Figure 1: Coauthor Graph Drawn with fdp (Graphviz)

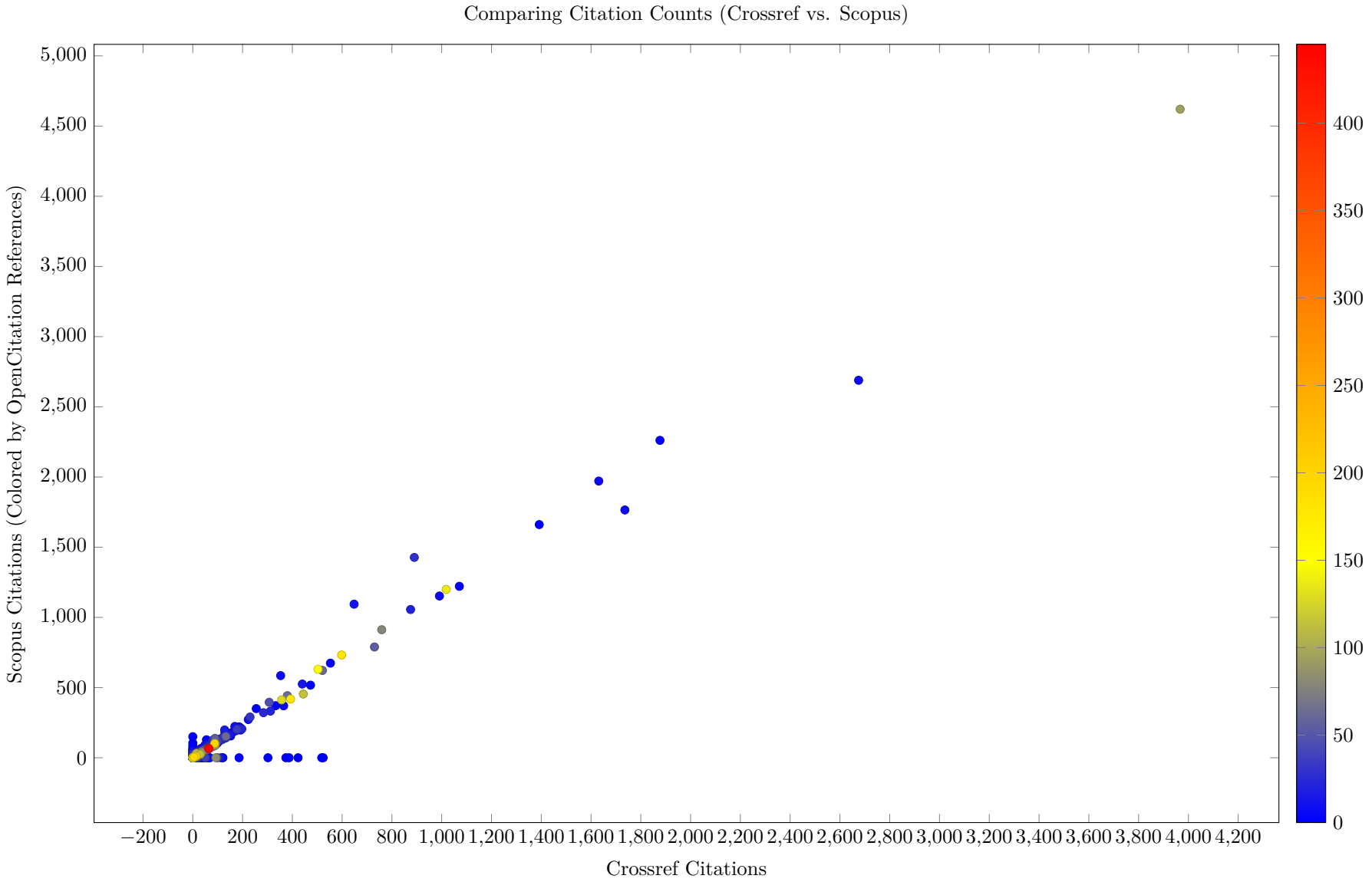


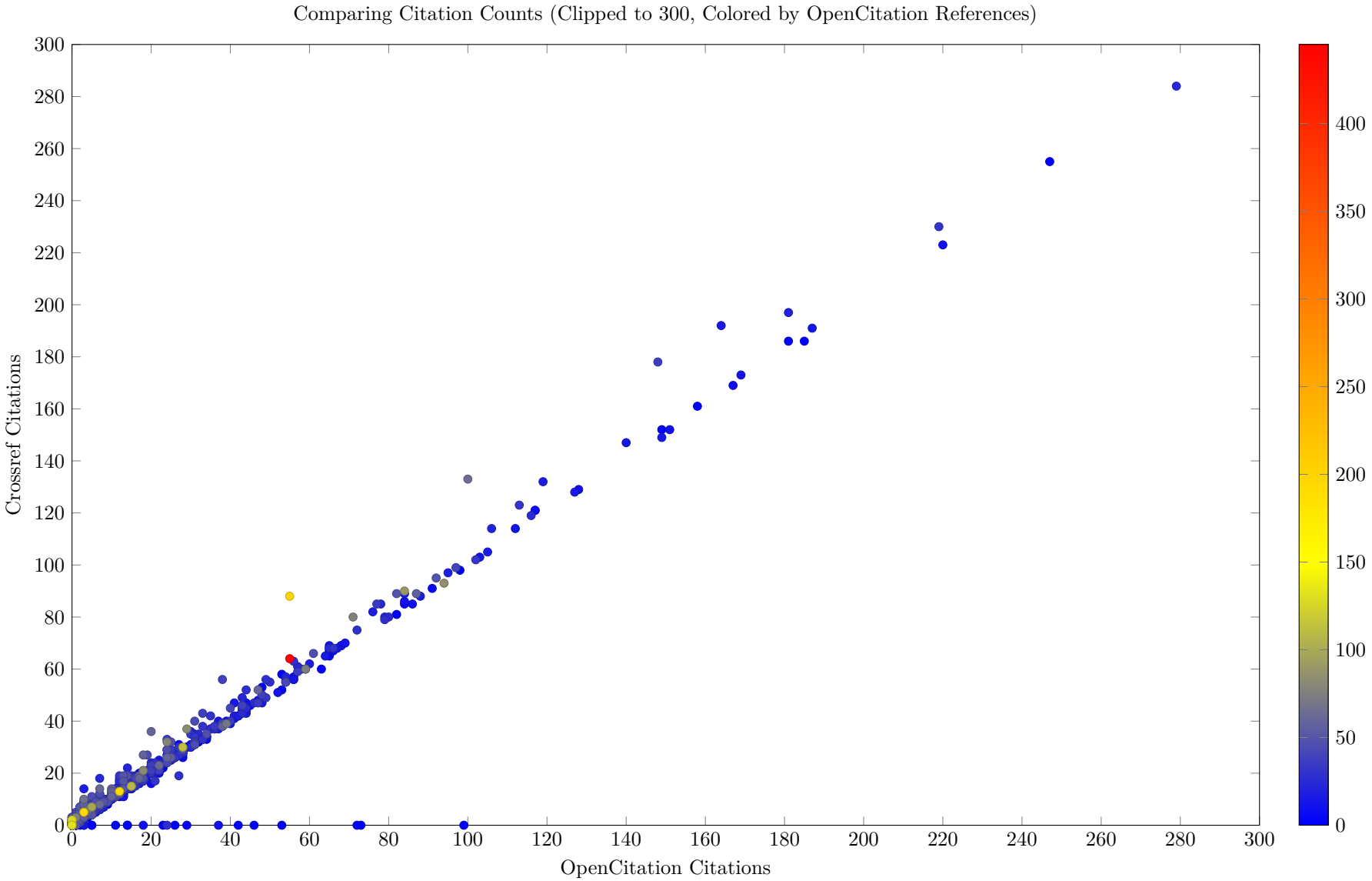
14 OpenCitations vs. Crossref Data vs. Scopus Data

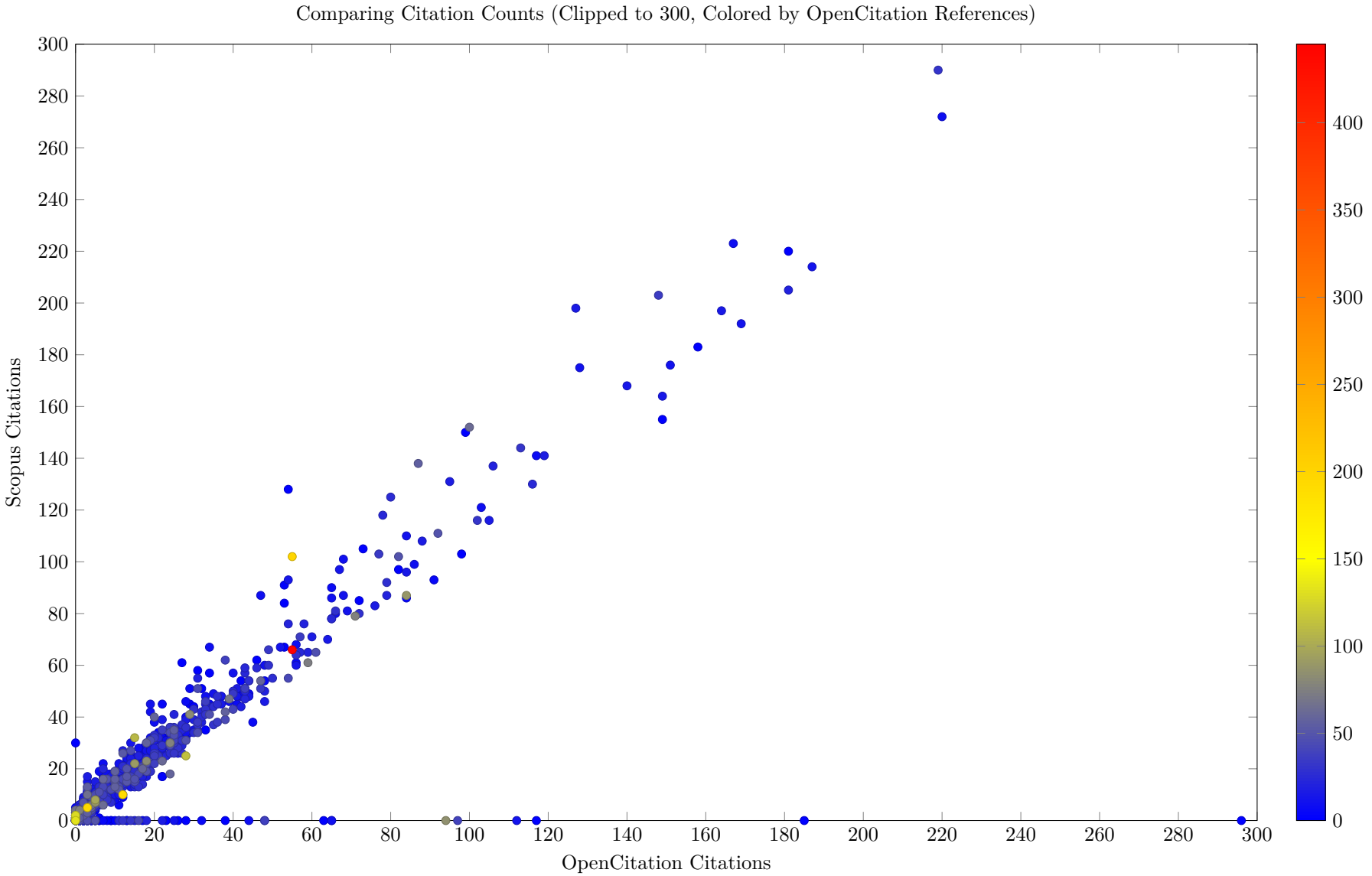
14.1 Citation Comparison

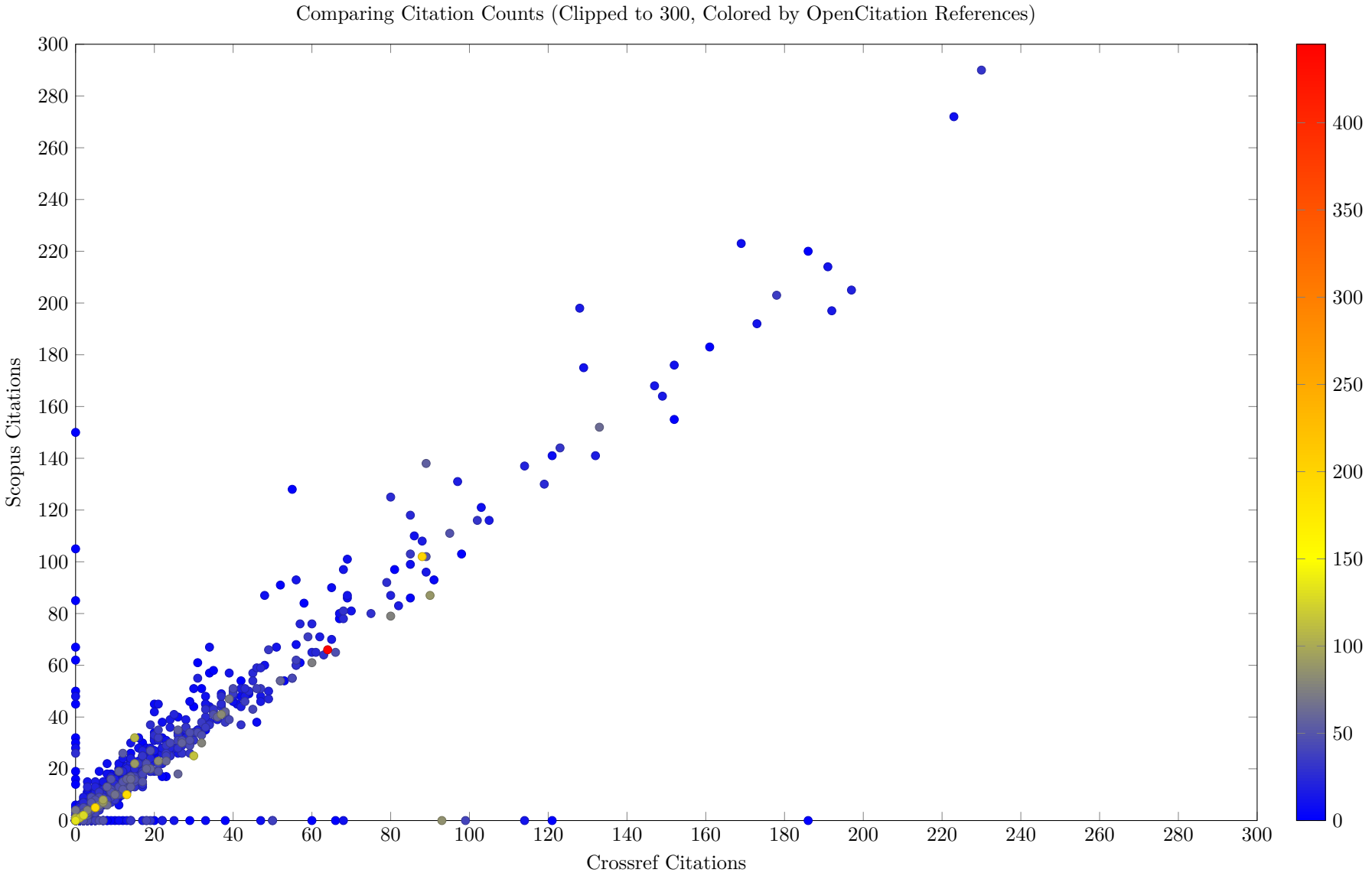



Comparing Citation Counts (Open Citations vs. Scopus)
Scopus Citations (Colored by OpenCitation References)
5,000
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
−200 0 200 400 600 800 1,000 1,200 1,400 1,600 1,800 2,000 2,200 2,400 2,600 2,800 3,000 3,200 3,400 3,600 3,800 4,000 4,200
OpenCitation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

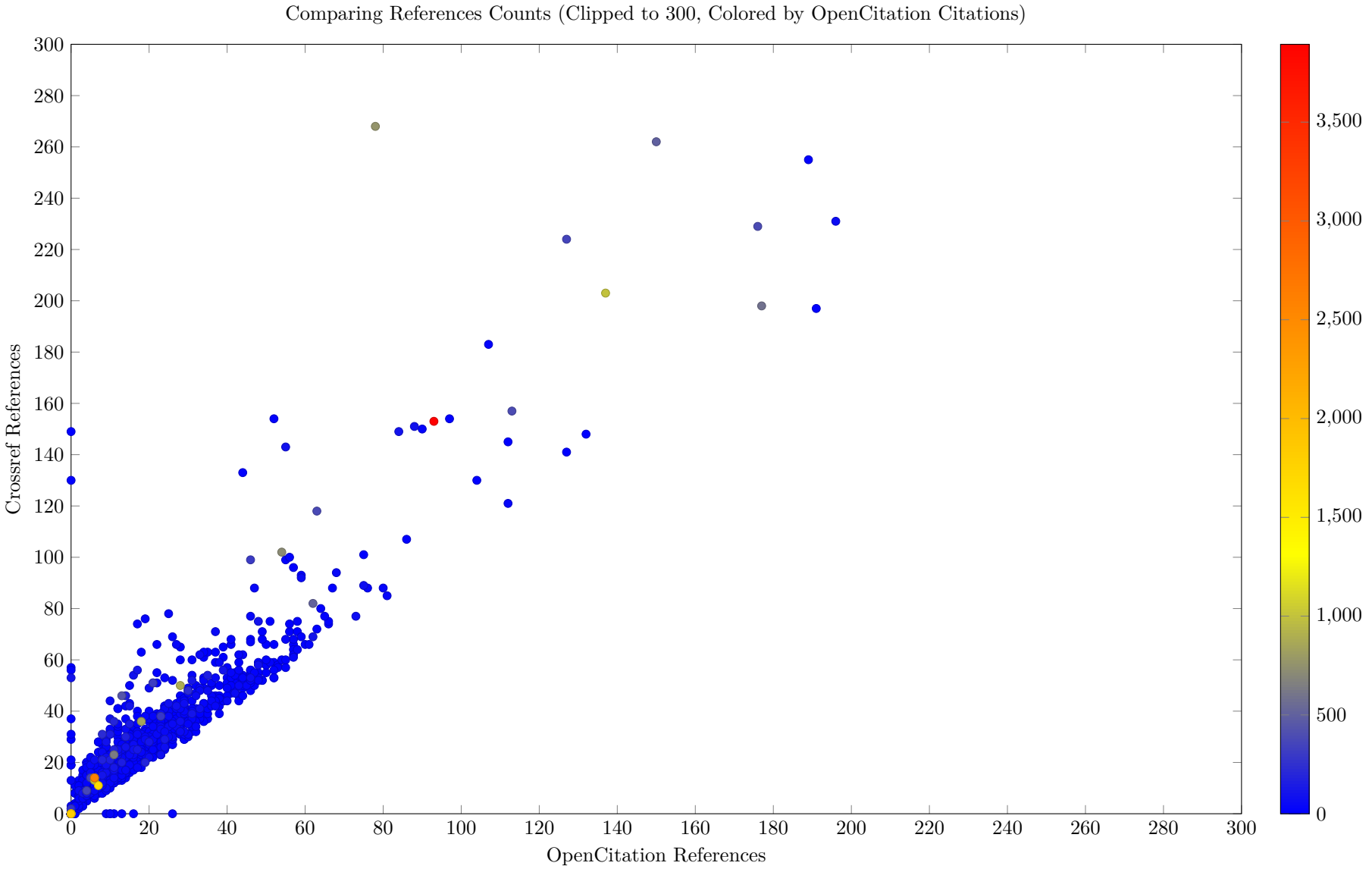

Comparing Citation Counts (Crossref vs. Scopus)
Scopus Citations (Colored by OpenCitation References)
5,000
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
−200 0 200 400 600 800 1,000 1,200 1,400 1,600 1,800 2,000 2,200 2,400 2,600 2,800 3,000 3,200 3,400 3,600 3,800 4,000 4,200
Crossref Citations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

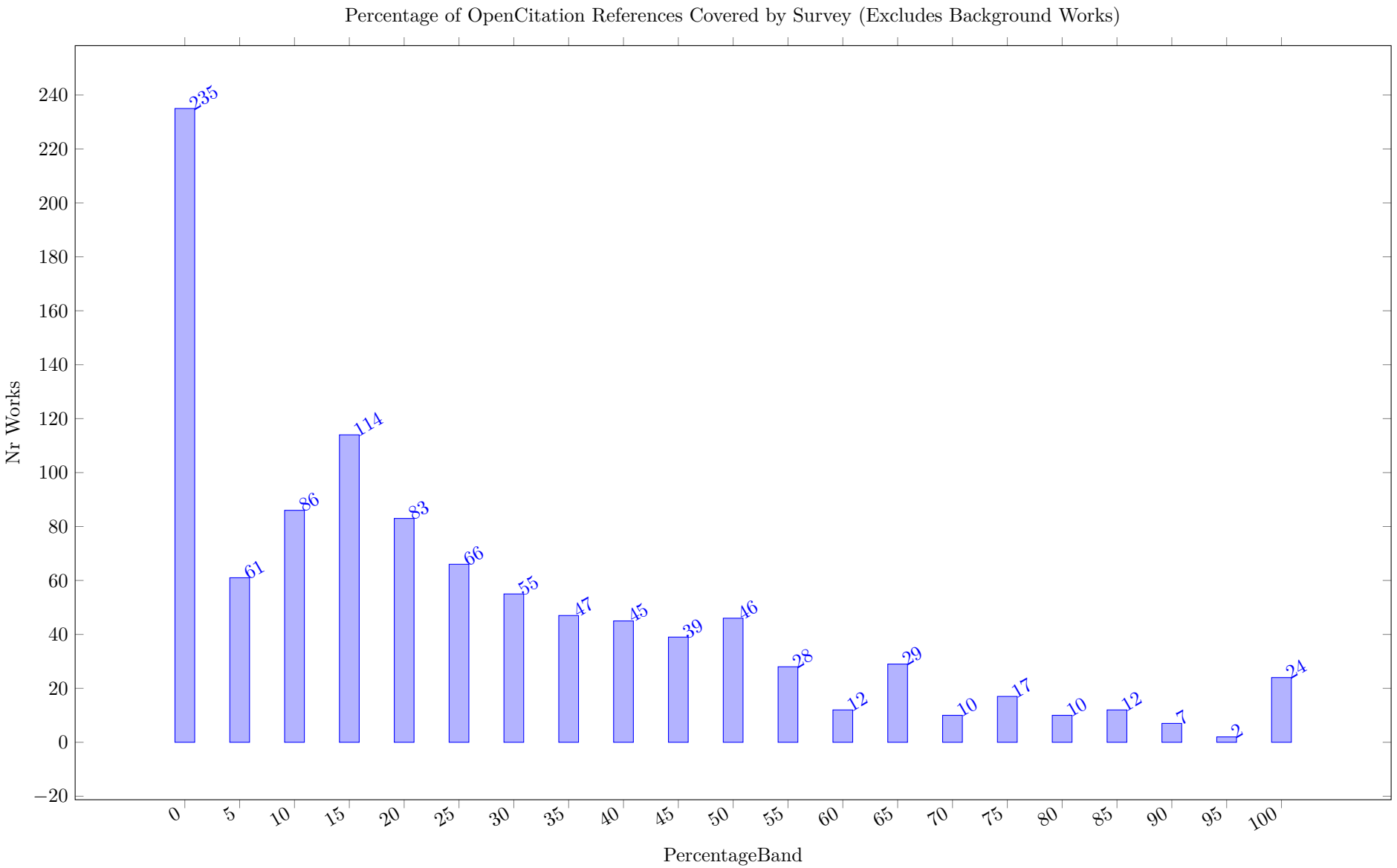

Comparing Citation Counts (Clipped to 300, Colored by OpenCitation References)
Scopus Citations
OpenCitation Citations
0
20
40
60
80
100
120
140
160
180
200
220
240
260
280
300
0
50
100
150
200
250
300
350
400

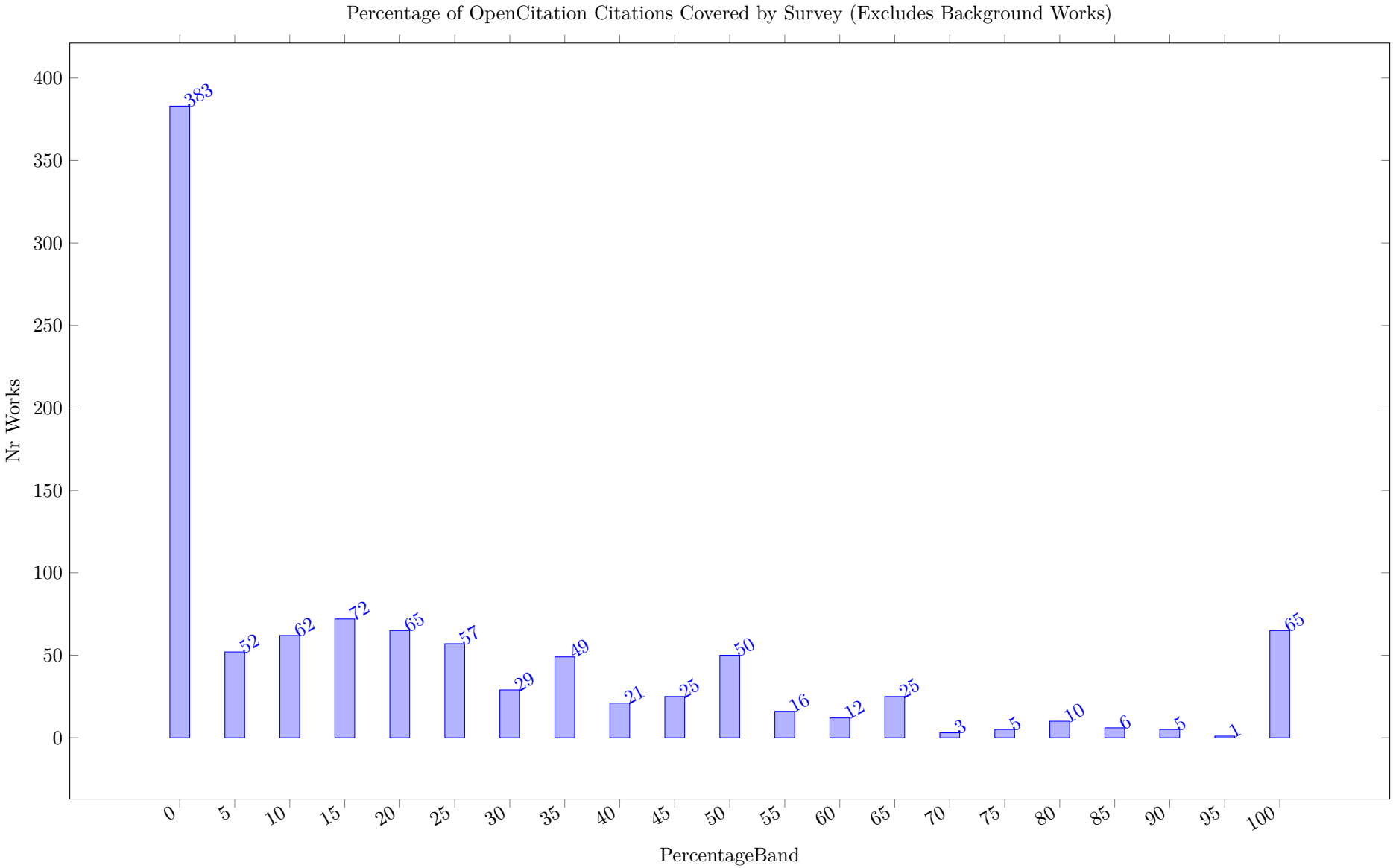

Comparing Citation Counts (Clipped to 300, Colored by OpenCitation References)
Scopus Citations
Crossref Citations
0
20
40
60
80
100
120
140
160
180
200
220
240
260
280
300
0
50
100
150
200
250
300
350
400

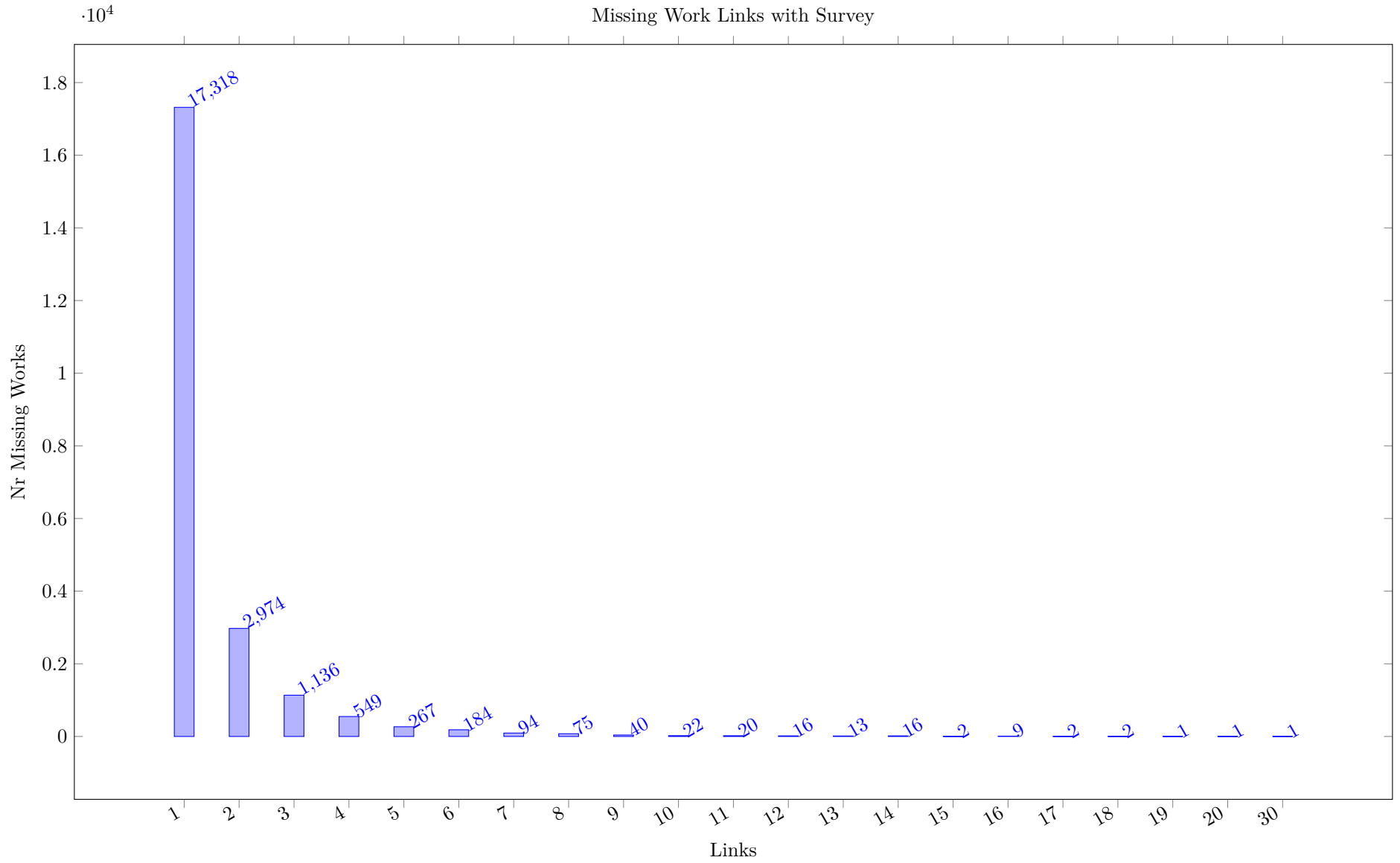
14.2 References Comparison



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
17,318
2,974
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

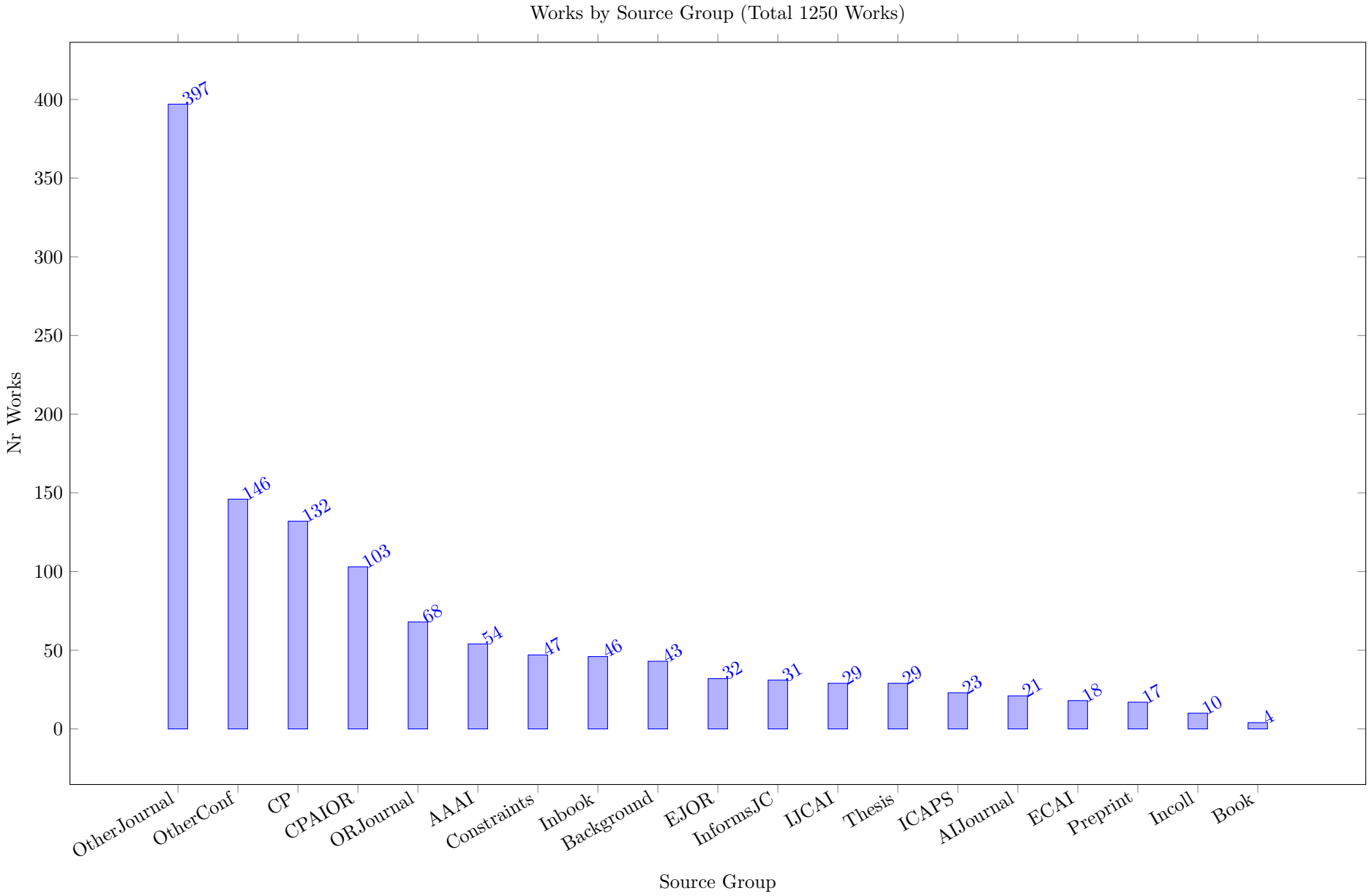
15 Citations by Year and Source Group

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 12: Source Groups

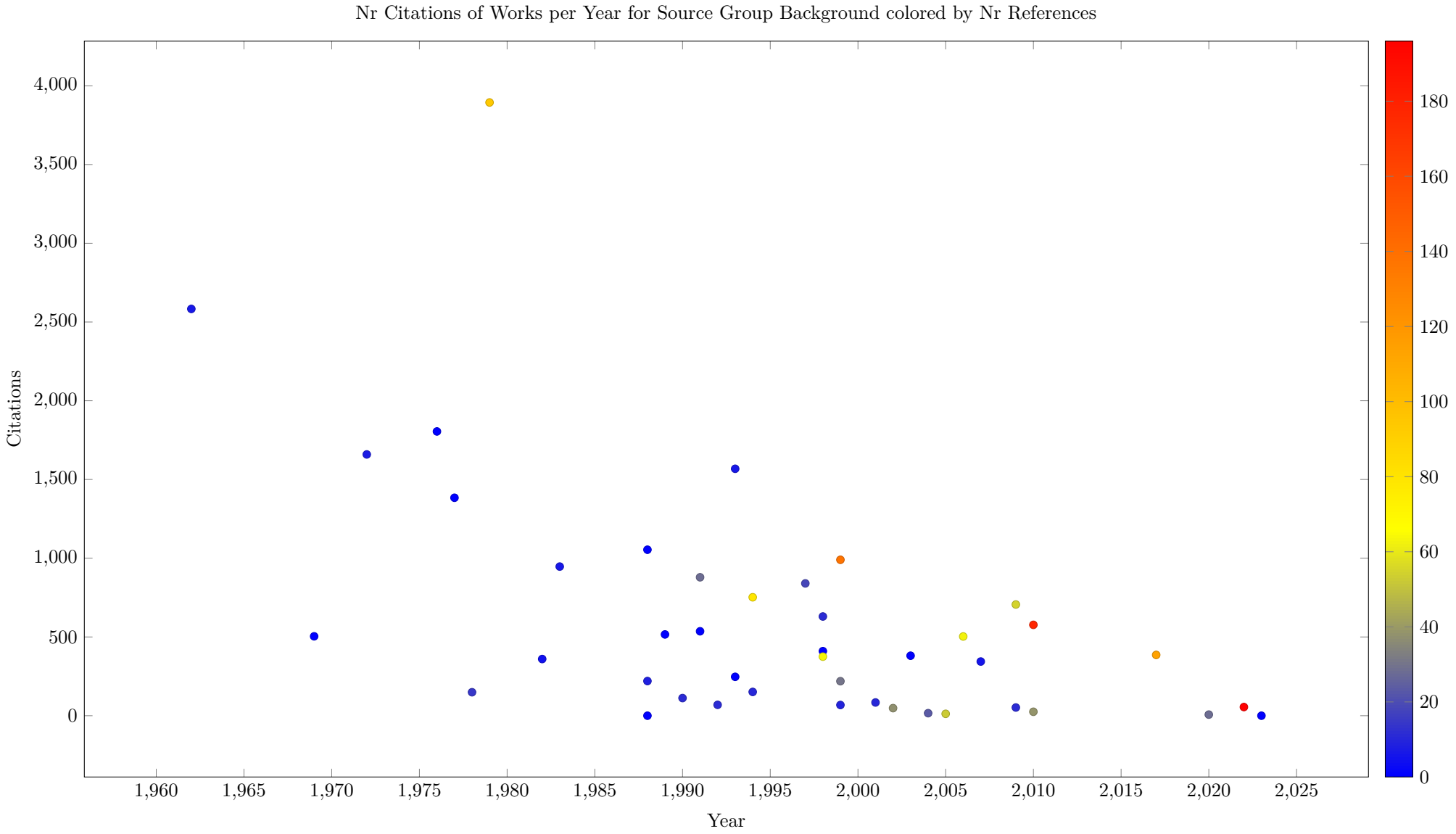
Name	Description
Background	Background material
CP	The CP conference (from 1995)
CPAIOR	The CPAIOR conference (starting 2004)
ICAPS	The ICAPS conference
AAAI	AAAI conference
IJCAI	IJCAI Conference
ECAI	ECAI Conference
OtherConf	Any other conference
Constraints	The Constraint Journal
EJOR	The European 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

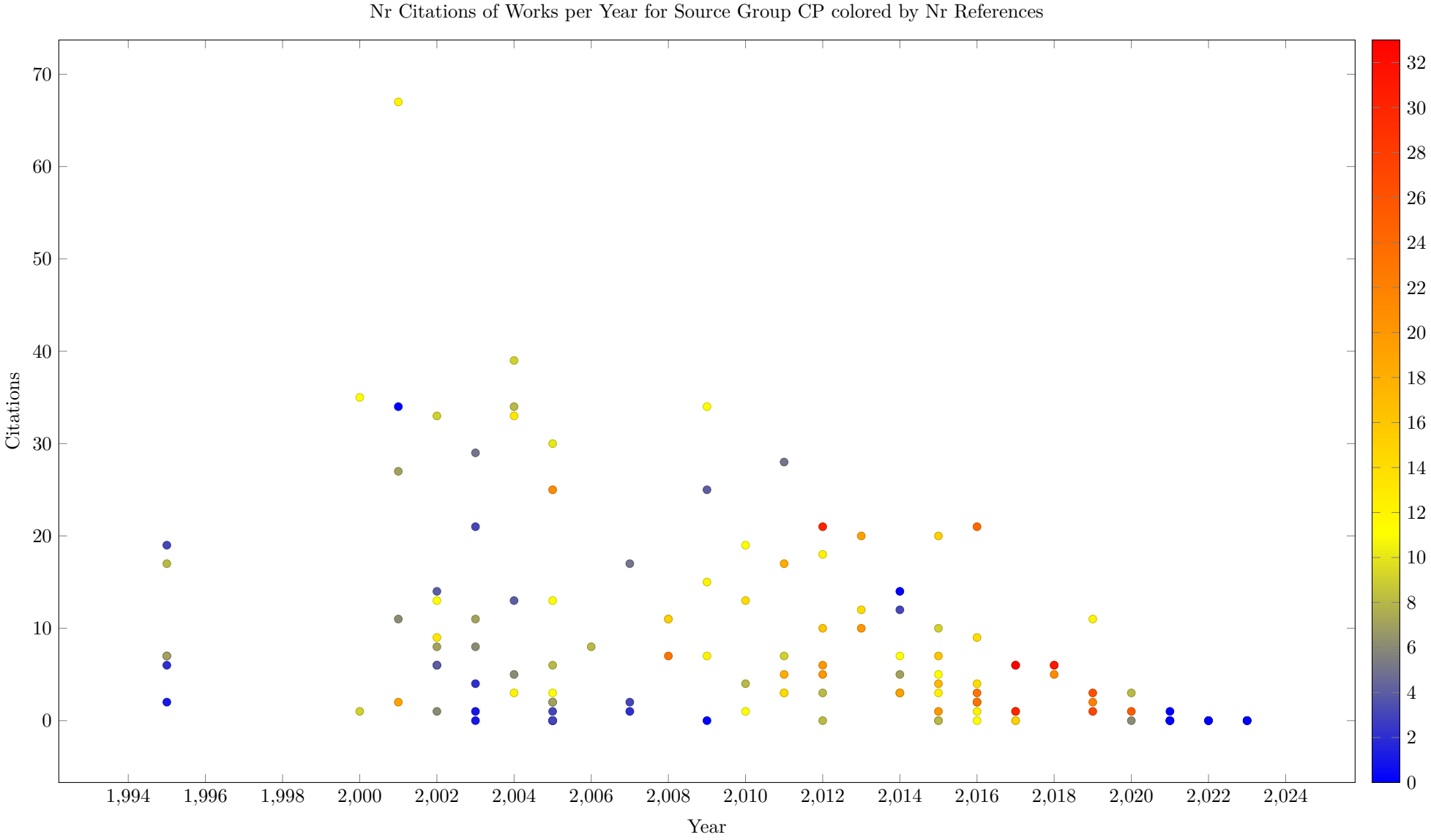
The first plot in this section shows how many works in each source group have been published. This considers the complete time period of the survey.


Works by Source Group (Total 1250 Works)
Nr Works
Source Group
0
50
100
150
200
250
300
350
400
397
146
132
103
68
54
47
46
43
32
31
29
29
23
21
18
17
10
4
OtherJournal
OtherConf
CP
CPAIOR
ORJournal
AAAI
Constraints
Inbook
Background
EJOR
InformsJC
IJCAI
Thesis
ICAPS
AIJournal
ECAI
Preprint
Incoll
Book

15.1 Source Group Citations by Year

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


Nr Citations of Works per Year for Source Group Background colored by Nr References
Citations
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
1,960
1,965
1,970
1,975
1,980
1,985
1,990
1,995
2,000
2,005
2,010
2,015
2,020
2,025
Year
180
160
140
120
100
80
60
40
20
0


Nr Citations of Works per Year for Source Group CP colored by Nr References
Citations
Year
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20
30
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50
60
70
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1,996
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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
2,024
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2
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8
10
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14
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18
20
22
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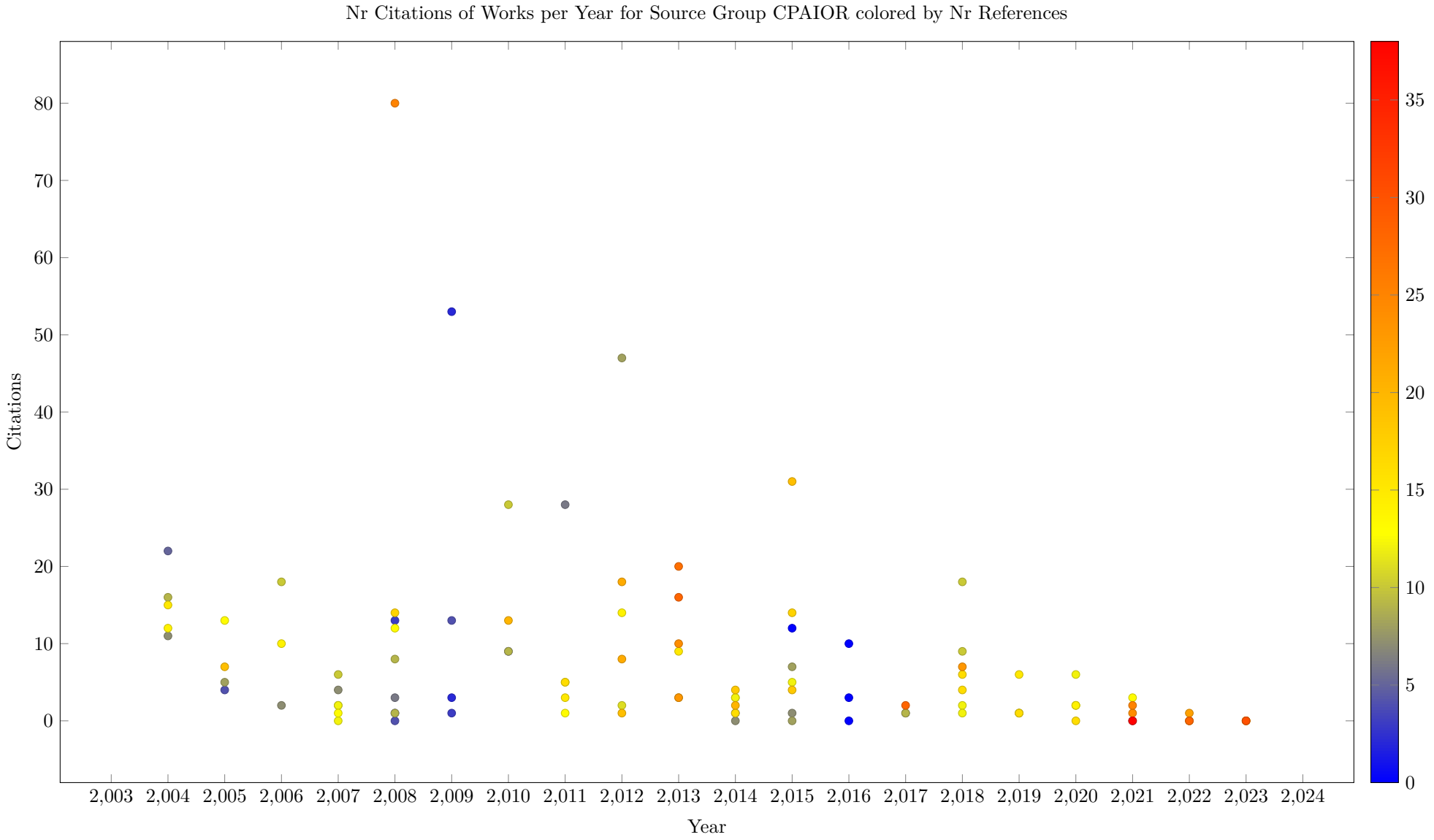
26
28
30
32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80
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2,013
2,014
2,015
2,016
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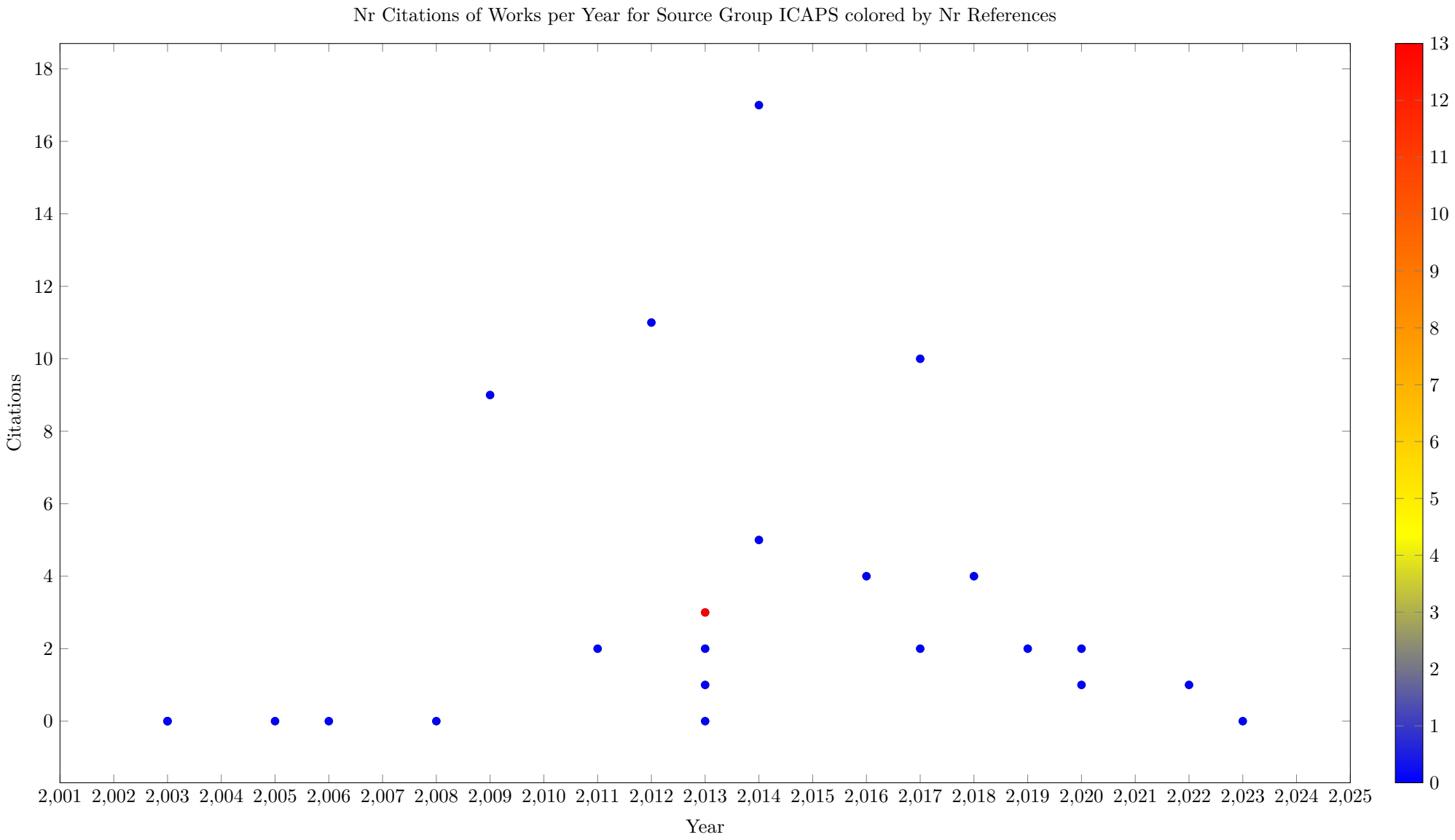
35


Nr Citations of Works per Year for Source Group ICAPS colored by Nr References
Citations
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6
8
10
12
14
16
18
Year
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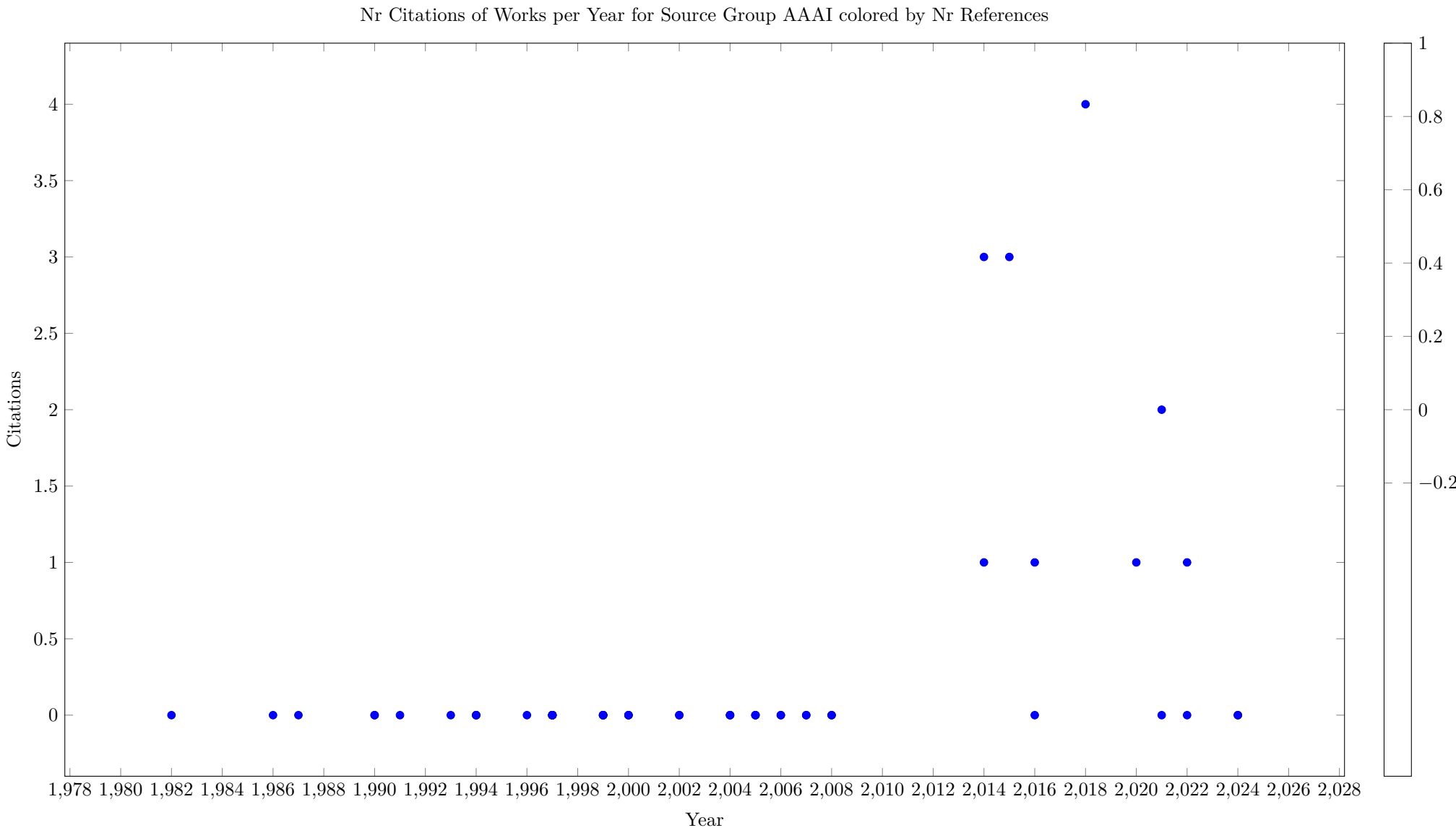
Nr Citations of Works per Year for Source Group AAAI colored by Nr References
Citations
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1.5
2
2.5
3
3.5
4
Year
1,978 1,980 1,982 1,984 1,986 1,988 1,990 1,992 1,994 1,996 1,998 2,000 2,002 2,004 2,006 2,008 2,010 2,012 2,014 2,016 2,018 2,020 2,022 2,024 2,026 2,028
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0.6
0.4
0.2
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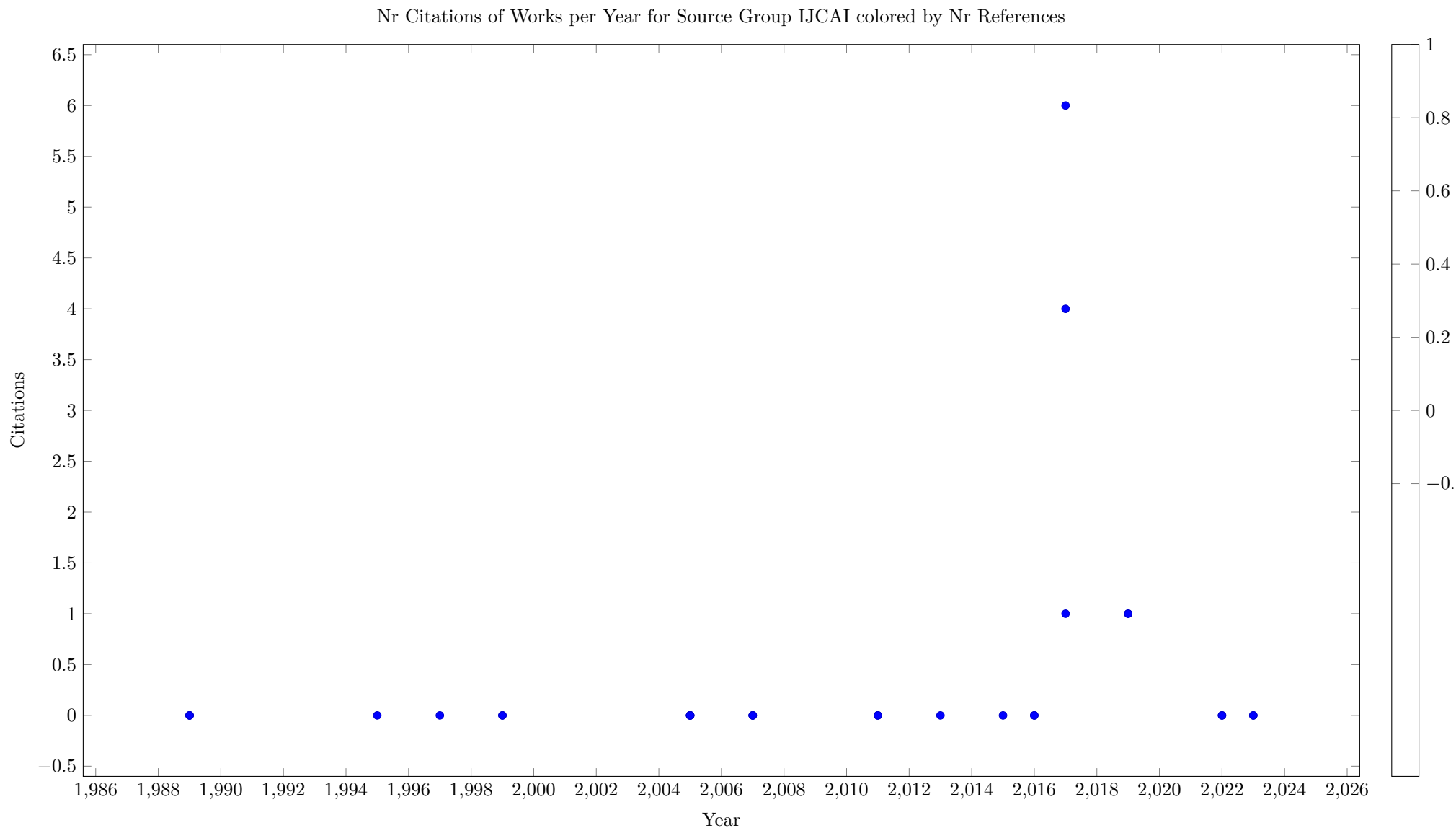
−0.2


Nr Citations of Works per Year for Source Group IJCAI colored by Nr References
Citations
Year
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6
5.5
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4.5
4
3.5
3
2.5
2
1.5
1
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0
−0.5
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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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2,014
2,016
2,018
2,020
2,022
2,024
2,026
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0.6
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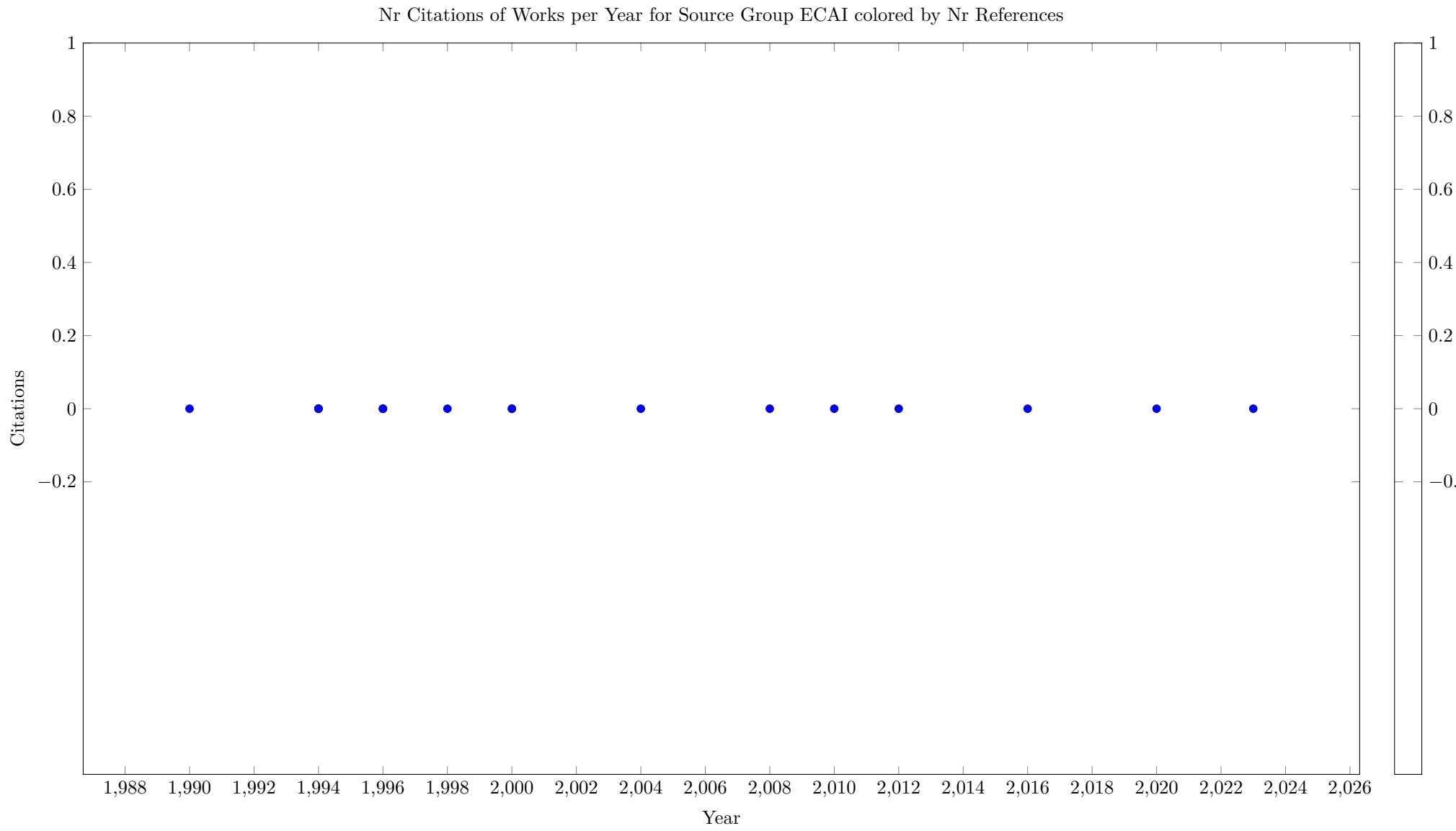
−0.


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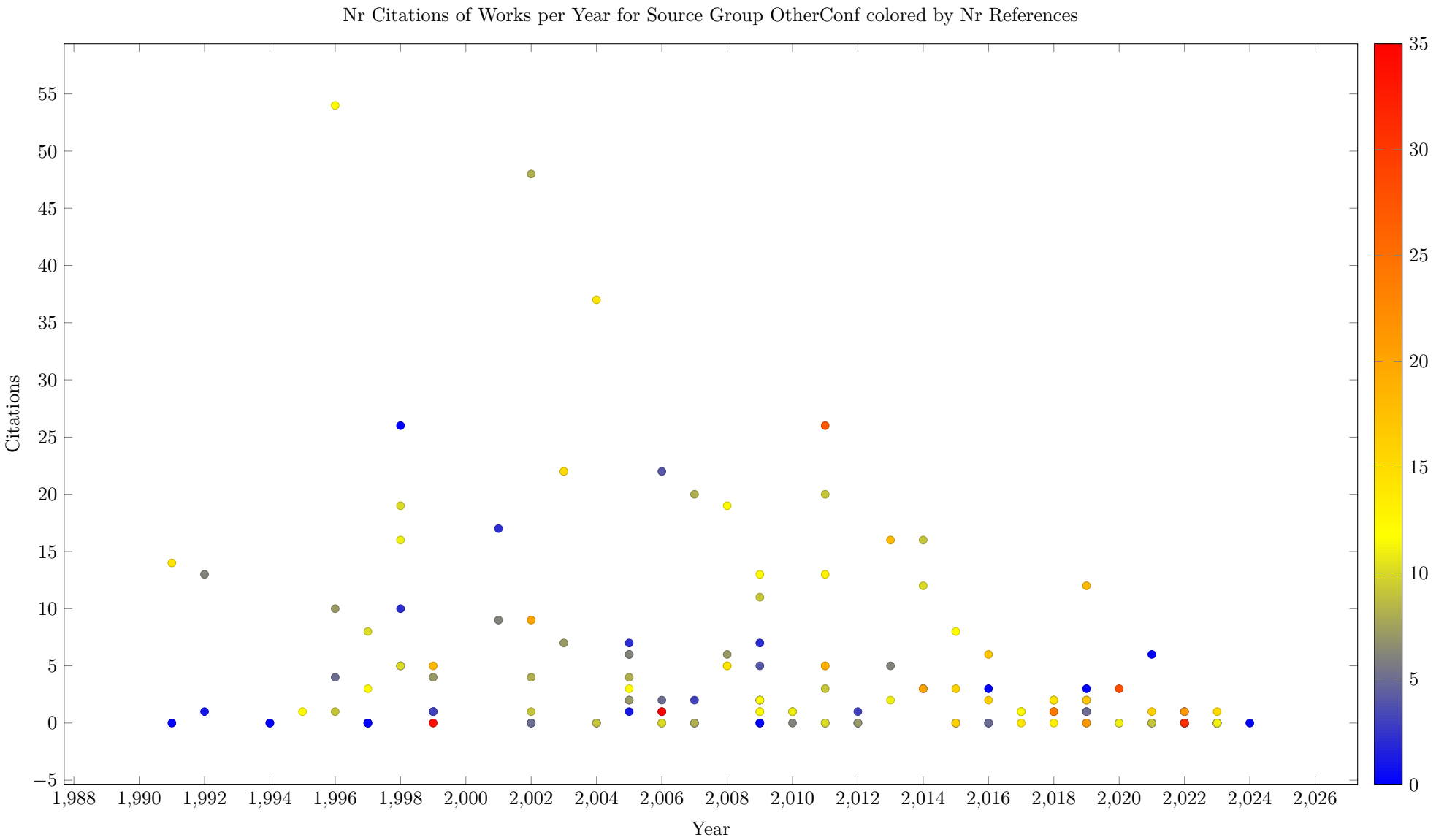
1,990
1,992
1,994
1,996
1,998
2,000
2,002
2,004
2,006
2,008
2,010
2,012
2,014
2,016
2,018
2,020
2,022
2,024
2,026
Year


Nr Citations of Works per Year for Source Group OtherConf colored by Nr References
Citations
Year
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45
40
35
30
25
20
15
10
5
0
−5
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1,990
1,992
1,994
1,996
1,998
2,000
2,002
2,004
2,006
2,008
2,010
2,012
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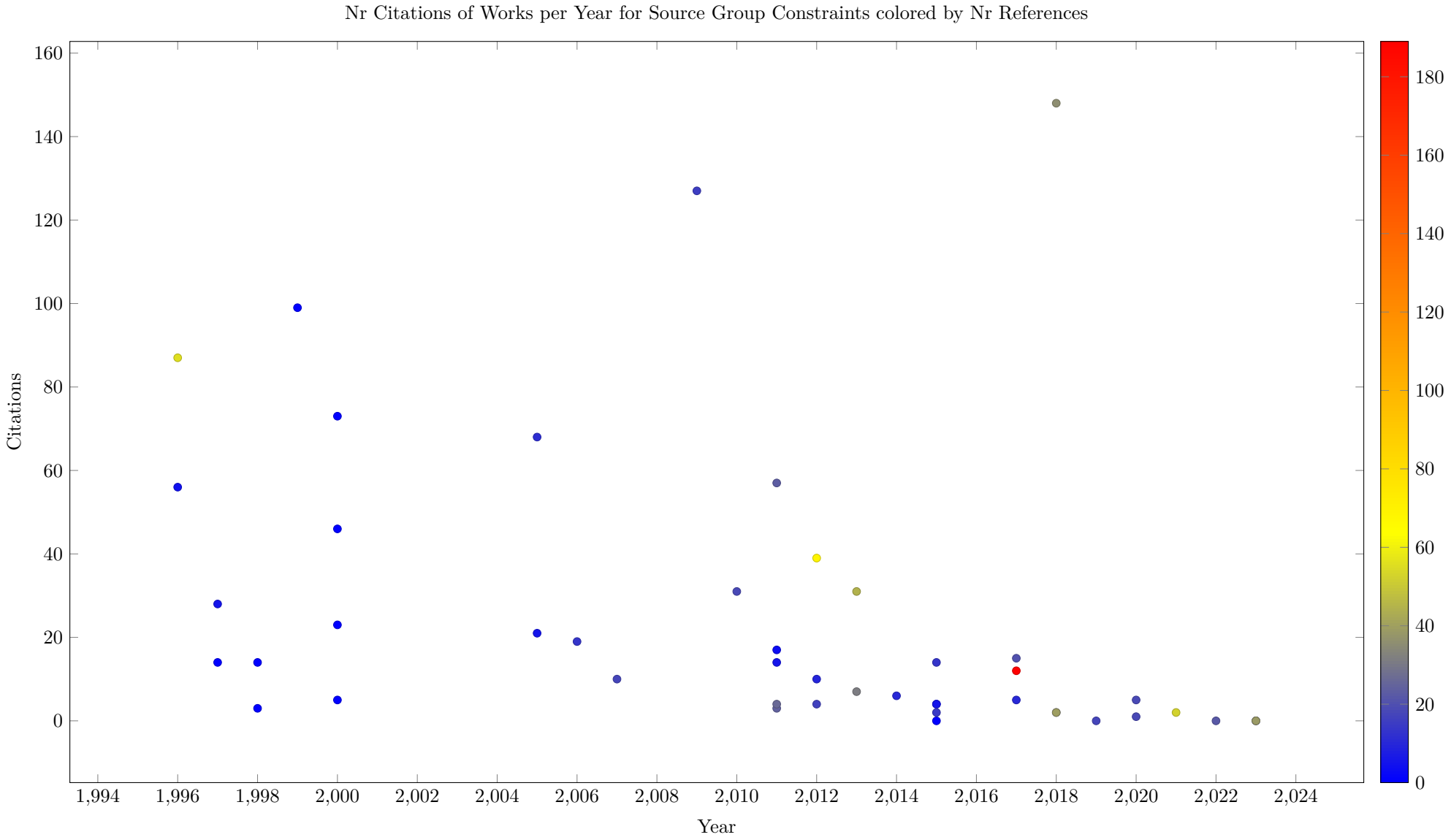
15
10
5
0


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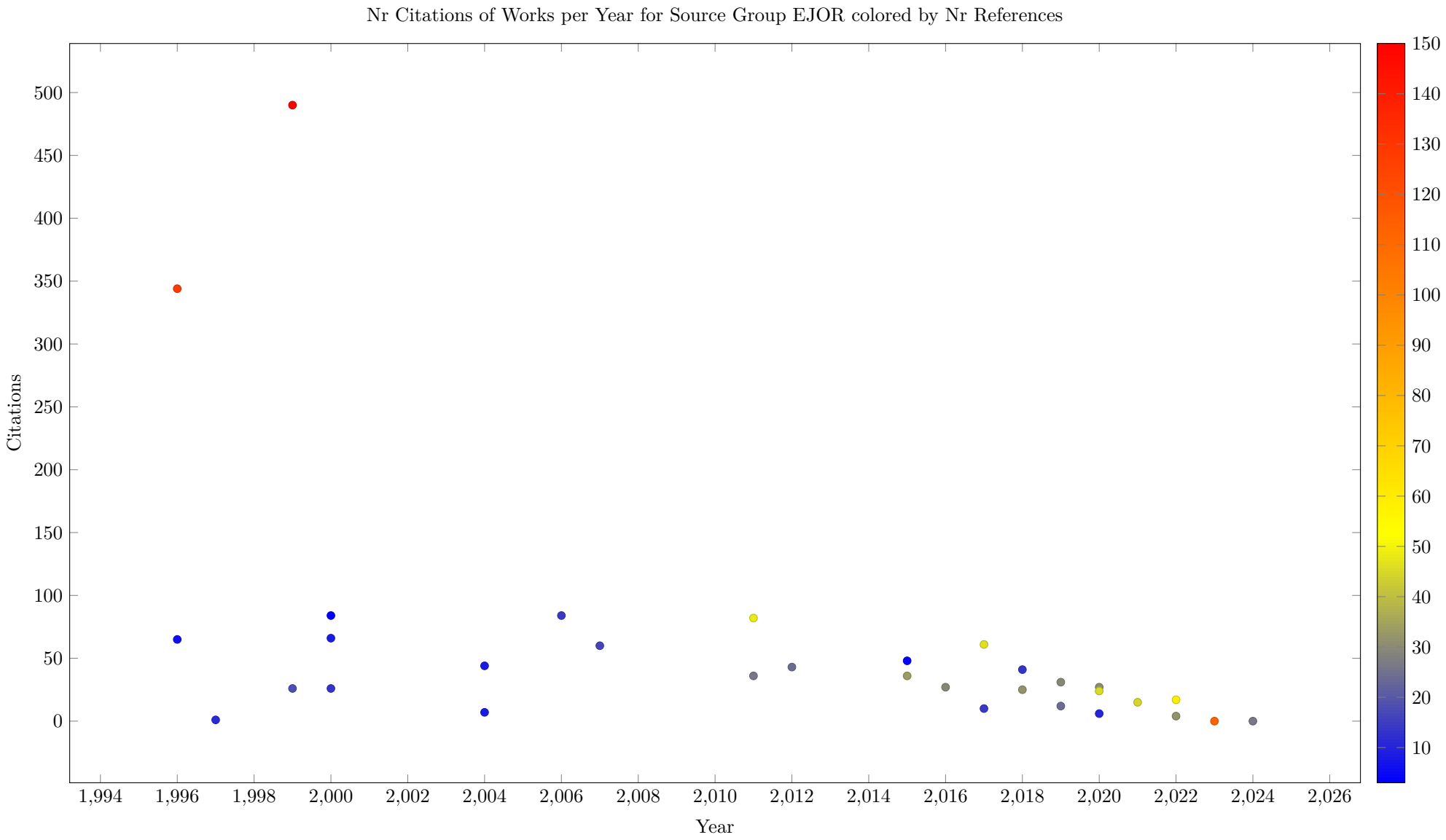
1,996
1,998
2,000
2,002
2,004
2,006
2,008
2,010
2,012
2,014
2,016
2,018
2,020
2,022
2,024


Nr Citations of Works per Year for Source Group EJOR colored by Nr References
Citations
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100
150
200
250
300
350
400
450
500
Year
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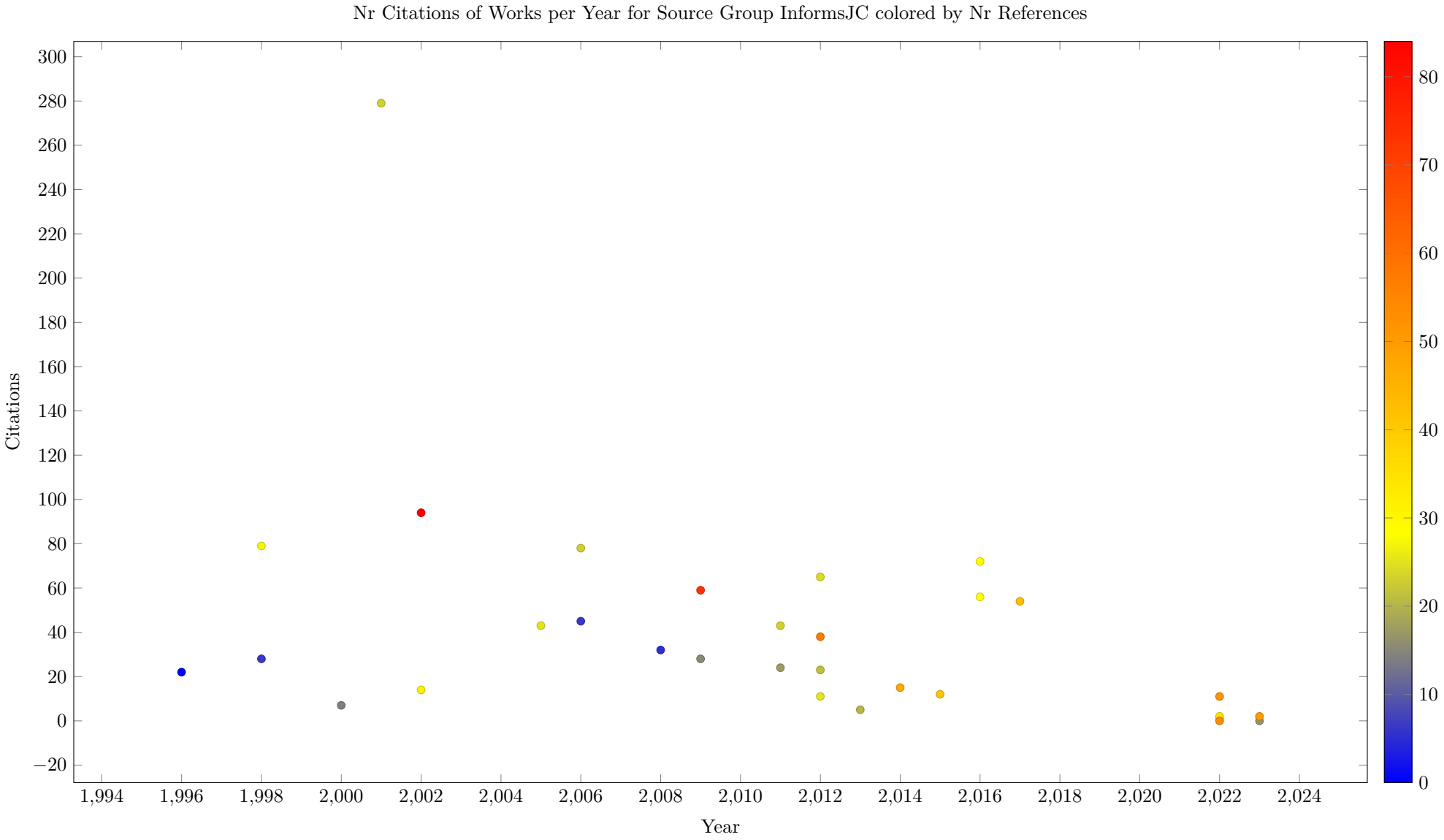
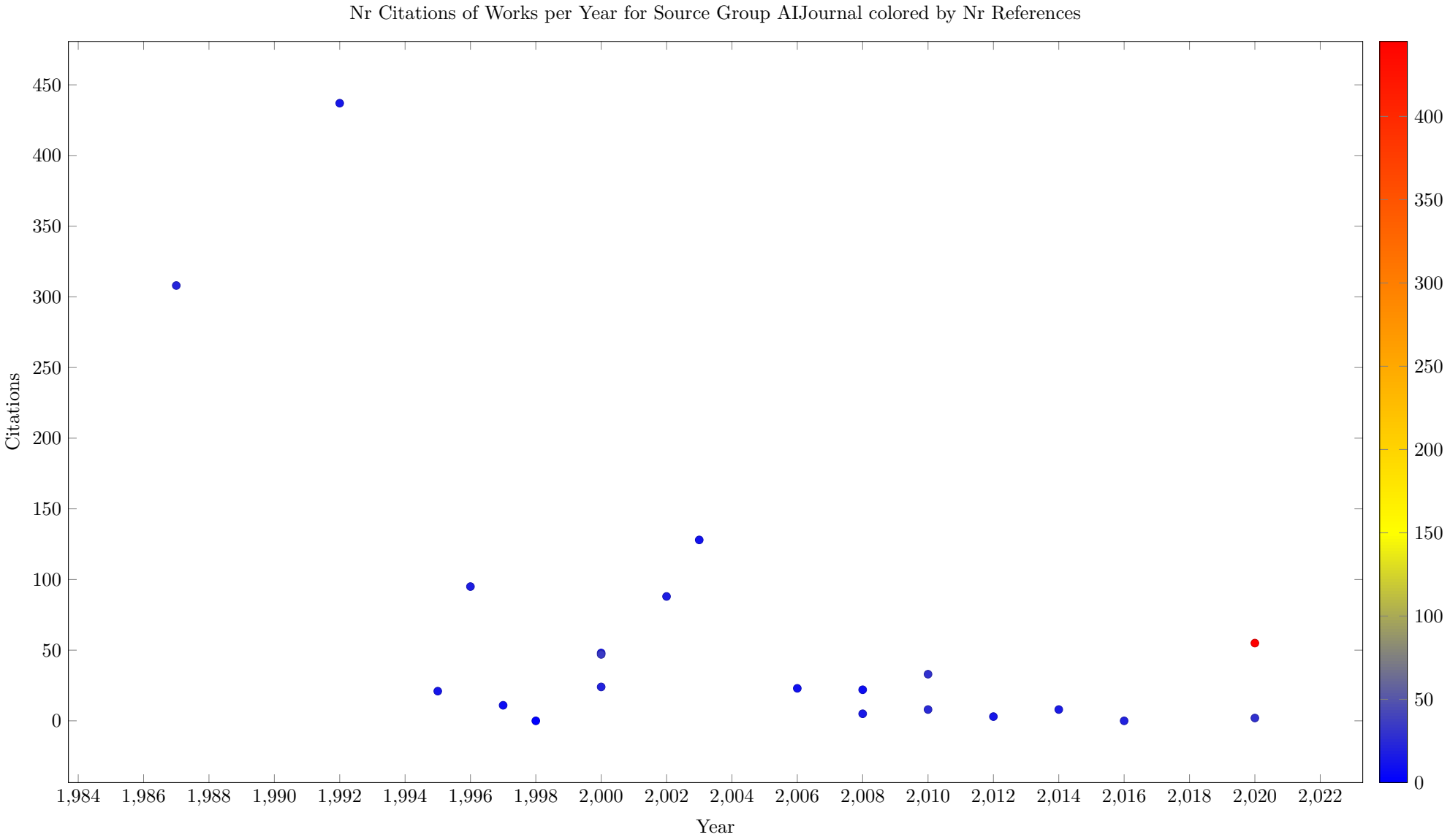
2,002
2,004
2,006
2,008
2,010
2,012
2,014
2,016
2,018
2,020
2,022
2,024
2,026
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150


Nr Citations of Works per Year for Source Group InformsJC colored by Nr References
Citations
300
280
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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50
100
150
200
250
300
350
400
450
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1,988
1,990
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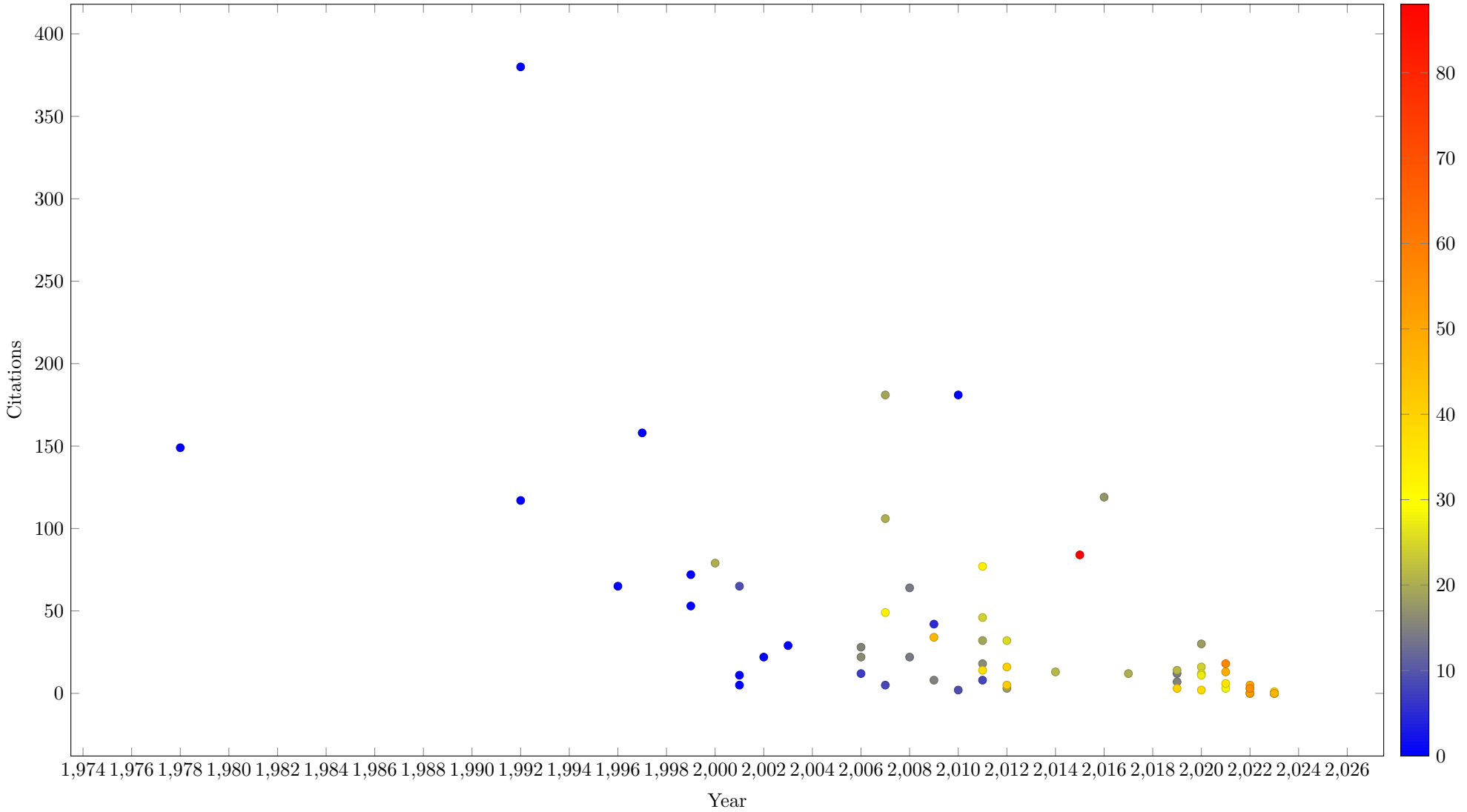
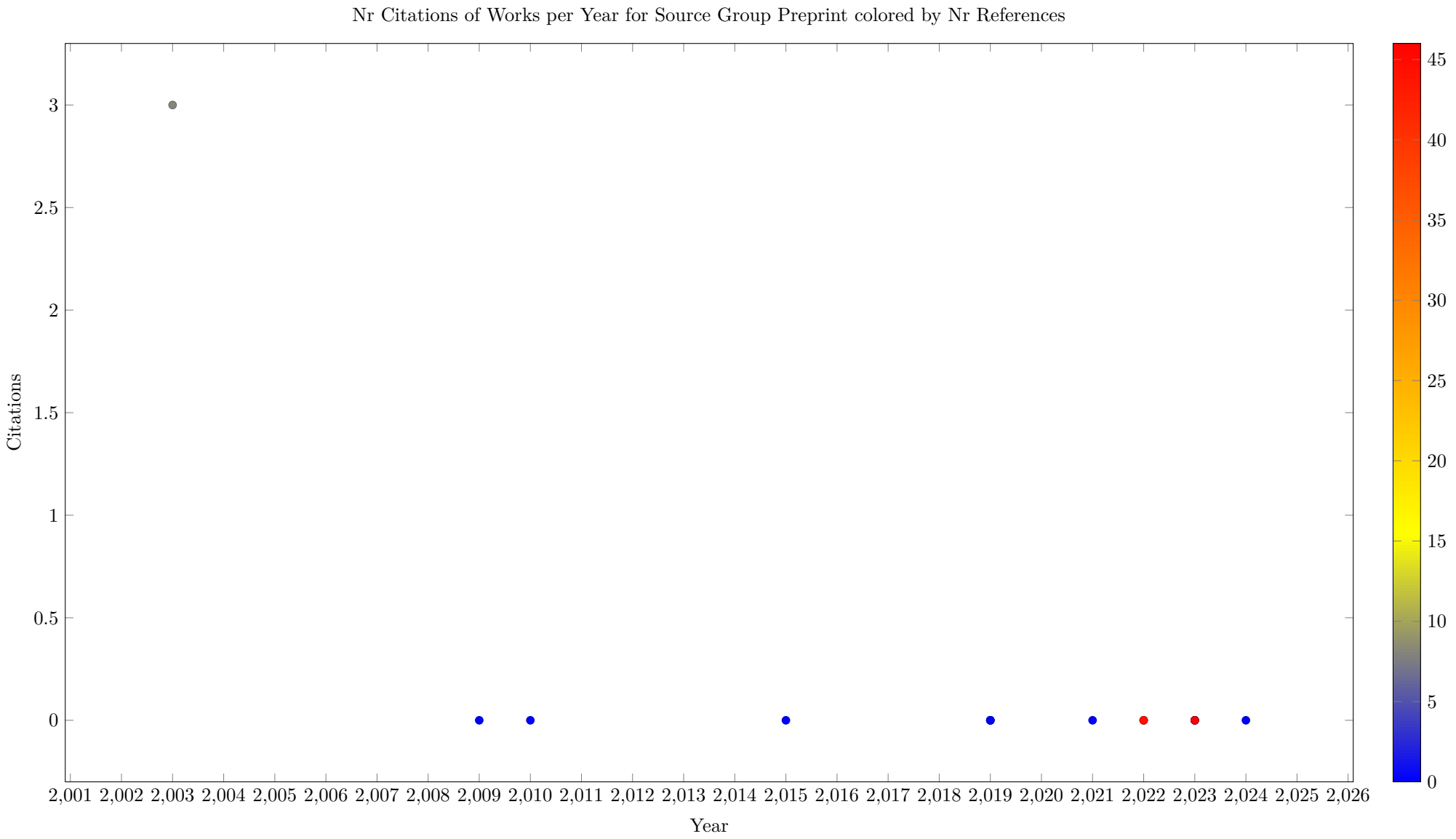
1,994
1,996
1,998
2,000
2,002
2,004
2,006
2,008
2,010
2,012
2,014
2,016
2,018
2,020
2,022
0
50
100
150
200
250
300
350
400

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




Nr Citations of Works per Year for Source Group Preprint colored by Nr References
Citations
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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
0
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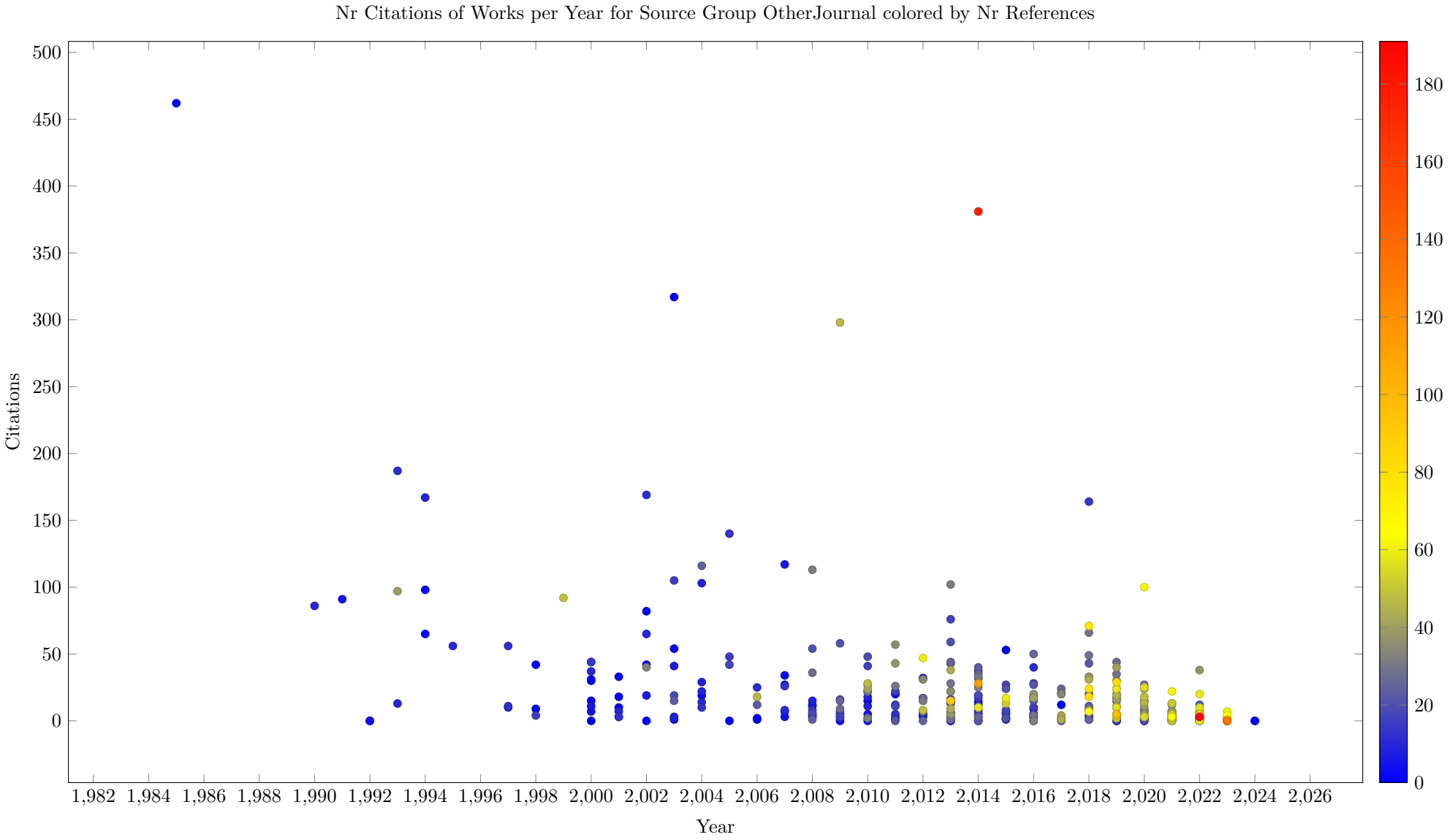
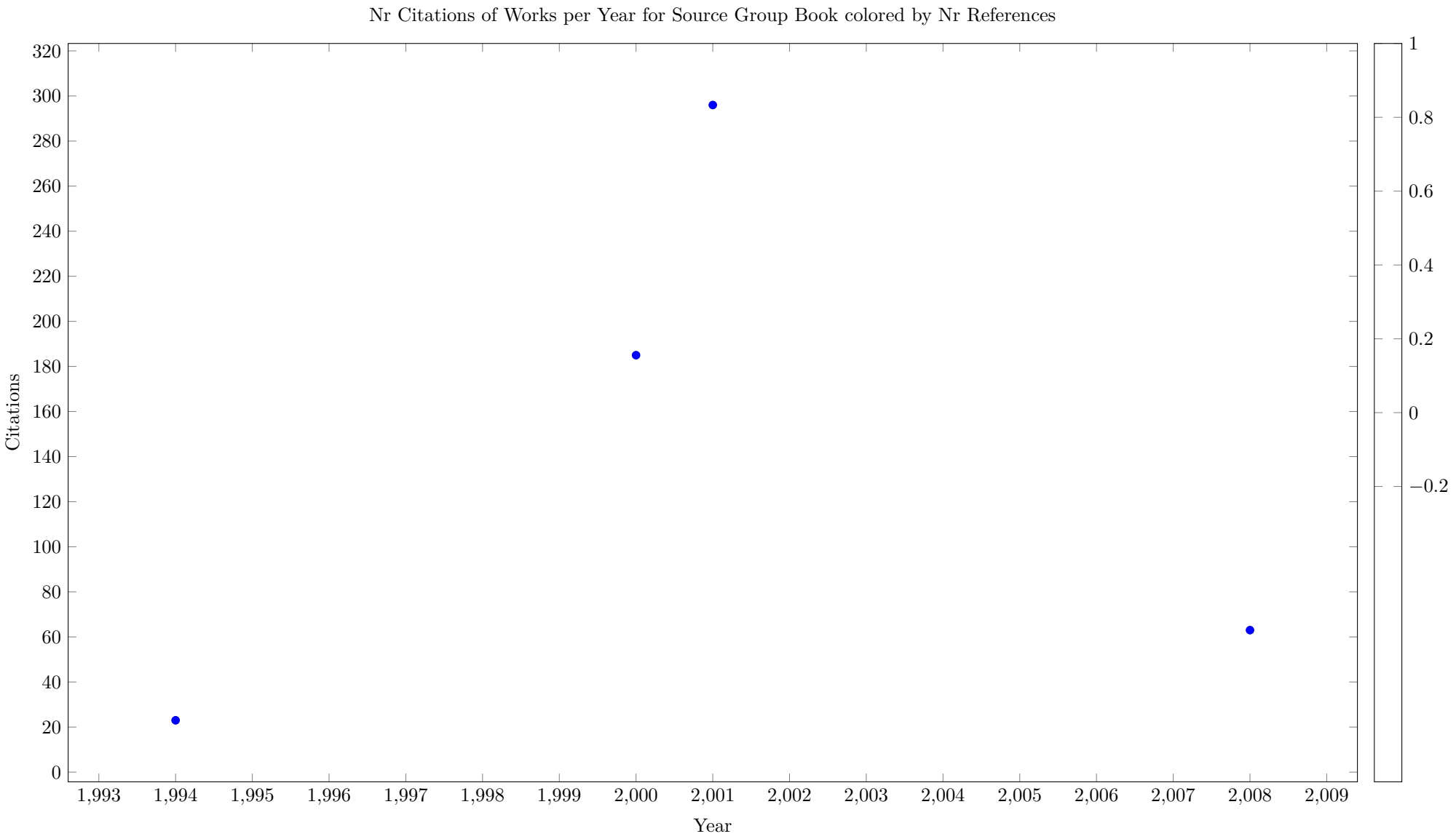
10
15
20
25
30
35
40
45


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
180
160
140
120
100
80
60
40
20
0


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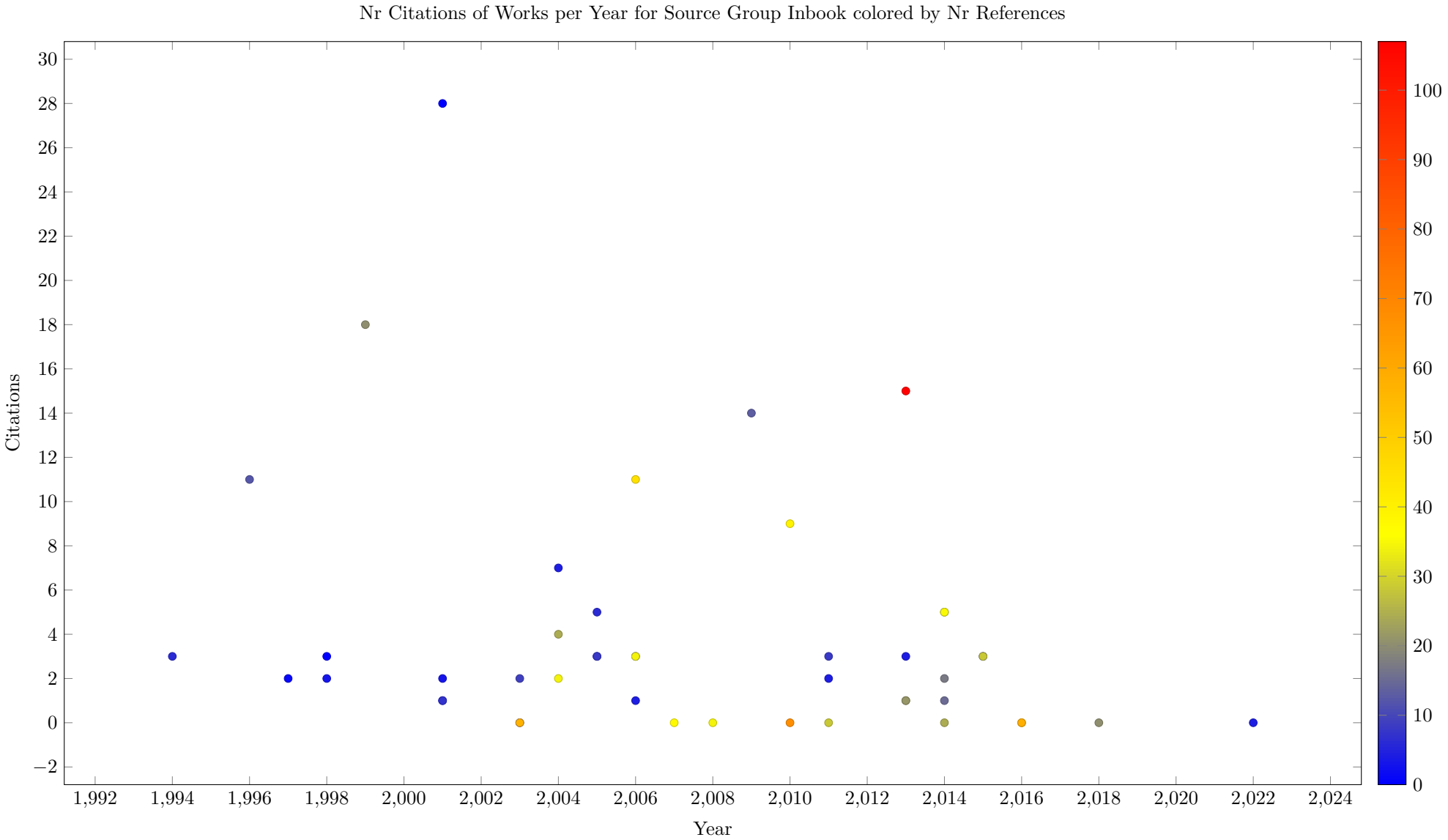
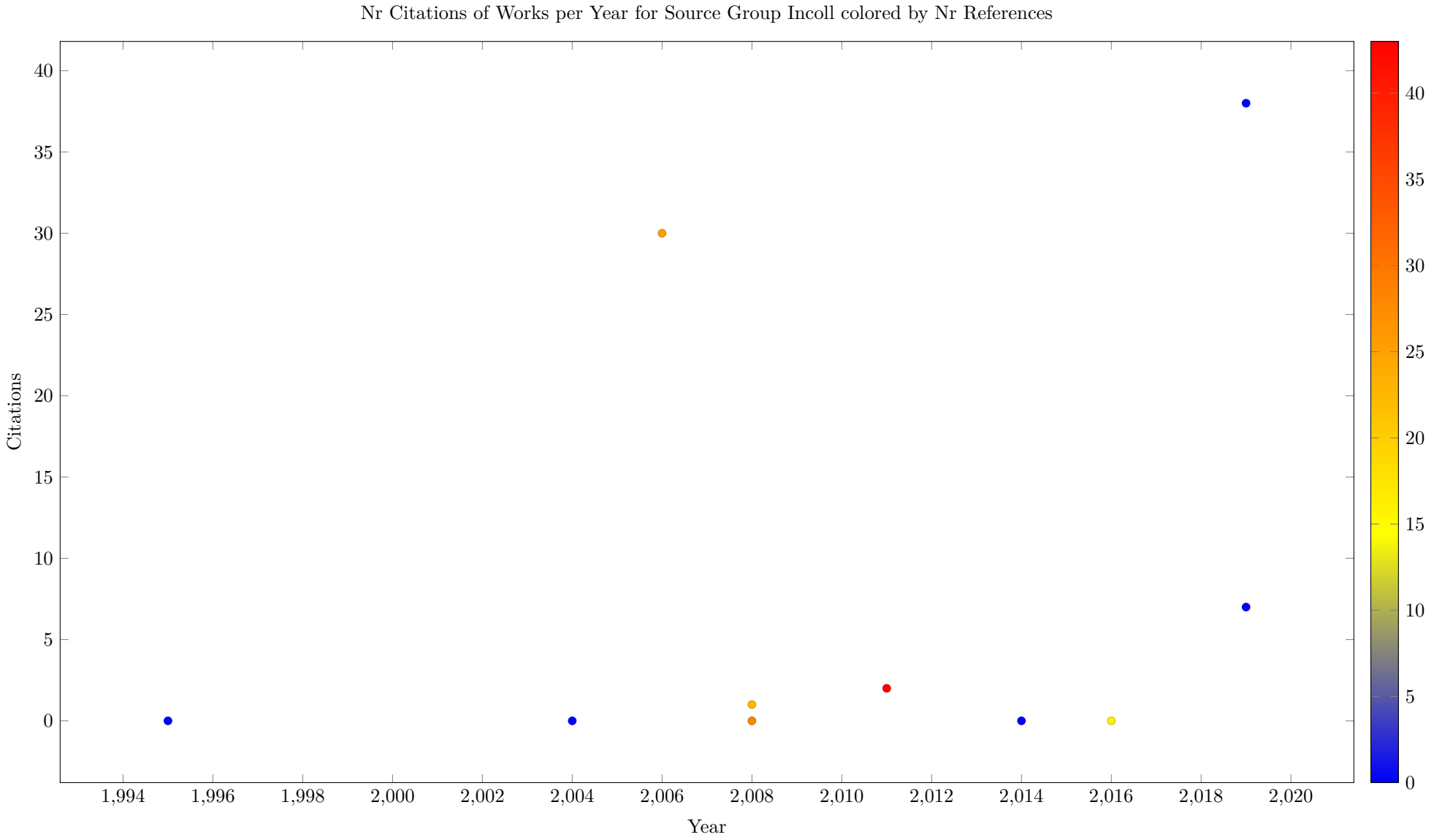
0.6
0.4
0.2
0
−0.2


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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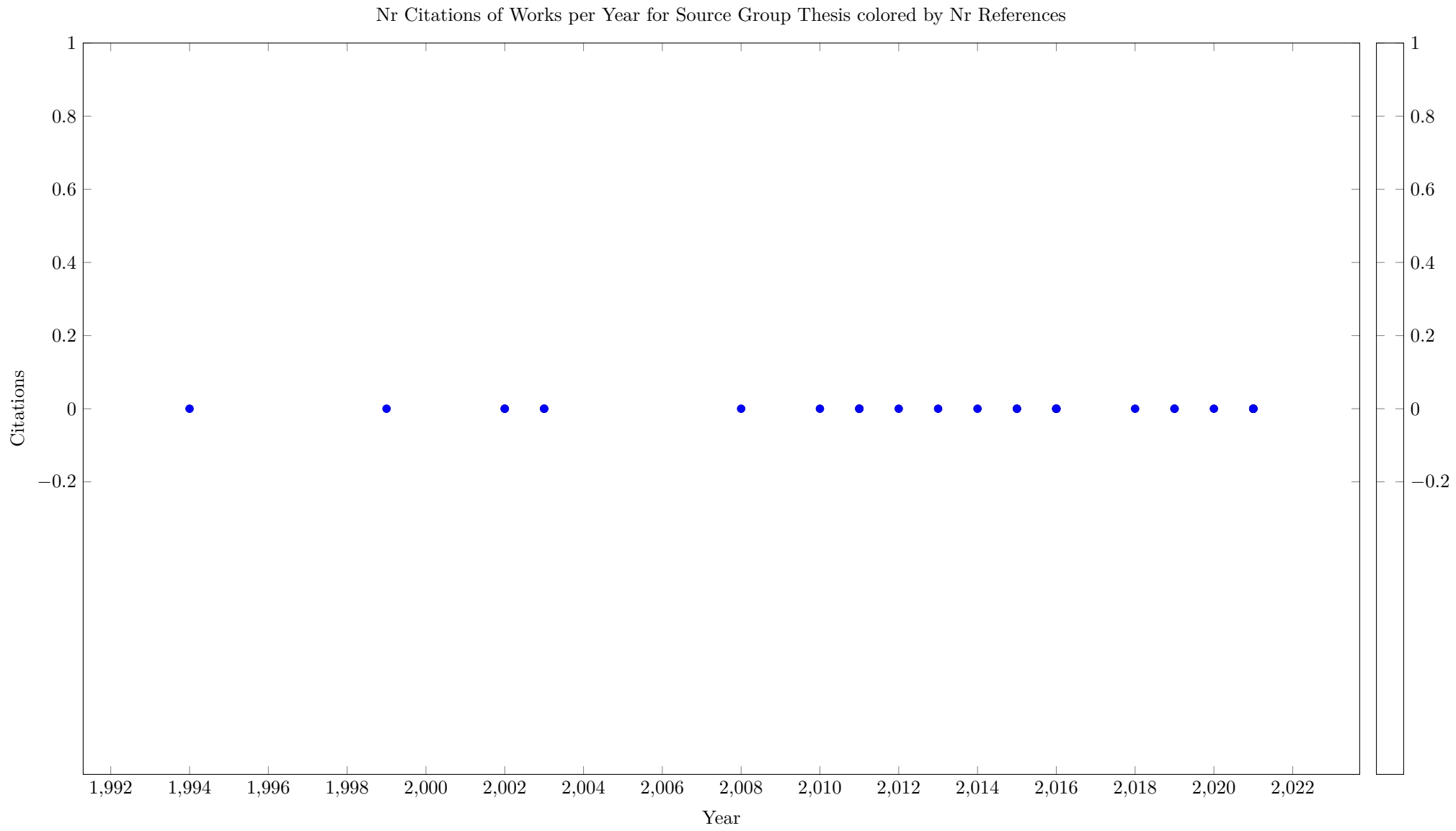
2,010
2,012
2,014
2,016
2,018
2,020


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

15.2 Reference Flows

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

Table 13: Reference Flows

	Background	CP	CPAIOR	ICAPS	AAAI	IJCAI	OtherConf	Constraints	EJOR	InformsJC	AIJournal	ORJournal	Preprint	OtherJournal	Book	Inbook	Incoll
Background	68	15	3				2	12	8	21	2	25		31	6	4	
CP	116	127	71	2	1	1	15	40	6	28	18	19		77	27	4	4
CPAIOR	98	109	71	4	2	1	20	48	15	26	7	29	1	79	28	6	2
ICAPS	4	3															
OtherConf	71	38	23				17	24	12	16	14	20		81	10	7	1
Constraints	63	58	43	2			10	24	5	15	8	16		63	18	3	1
EJOR	62	2	1				1	10	21	19	6	18		44		3	1
InformsJC	70	21	12				1	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	76	56	6			35	111	100	98	60	133		573	40	12	6
Inbook	99	16	15				7	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.

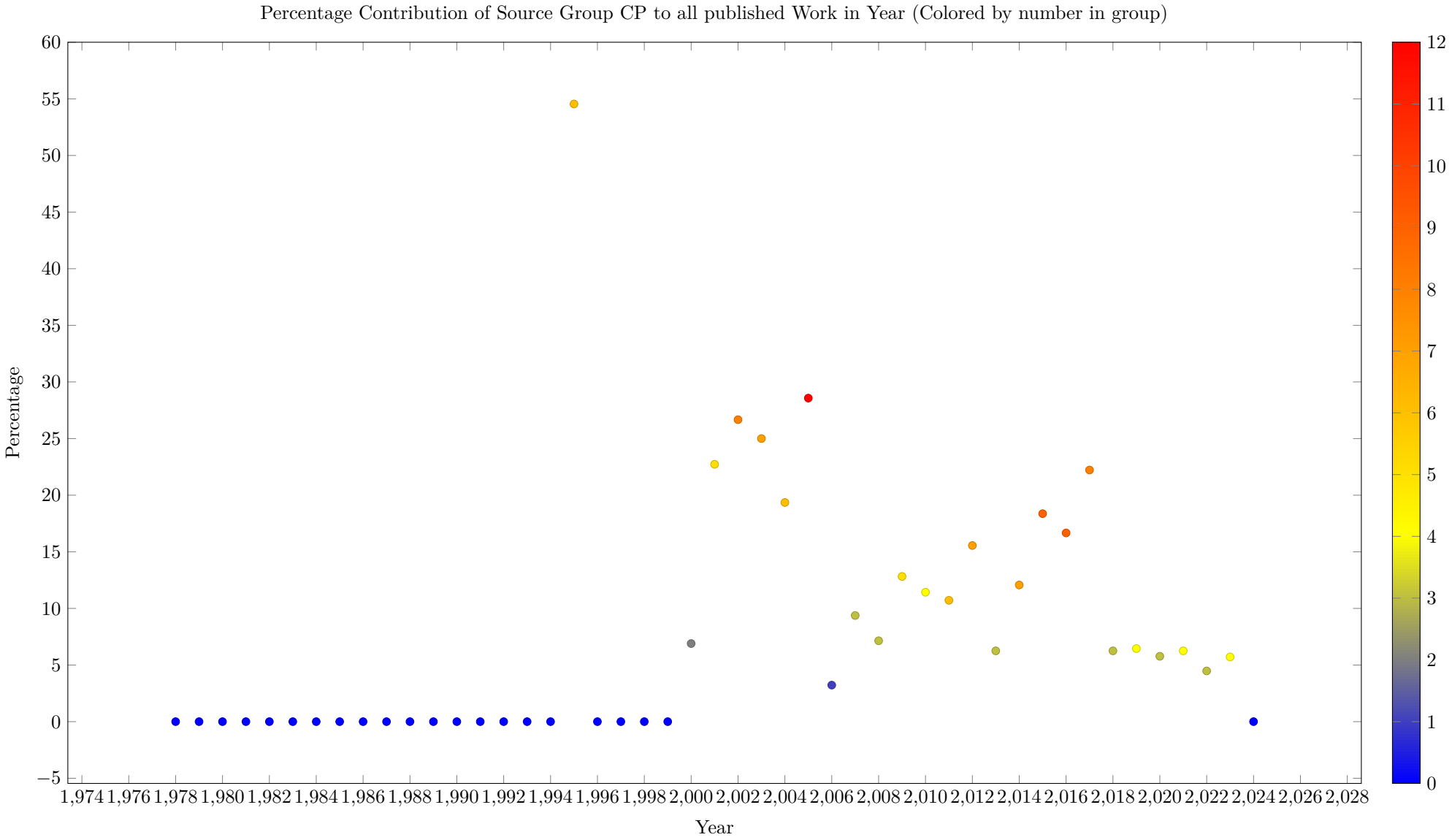
Note that the numbers are derived from the flows contained in the survey, which are based on the OpenCitation reference links. If such links are missing, or we are missing works in some group, then the results will be affected.

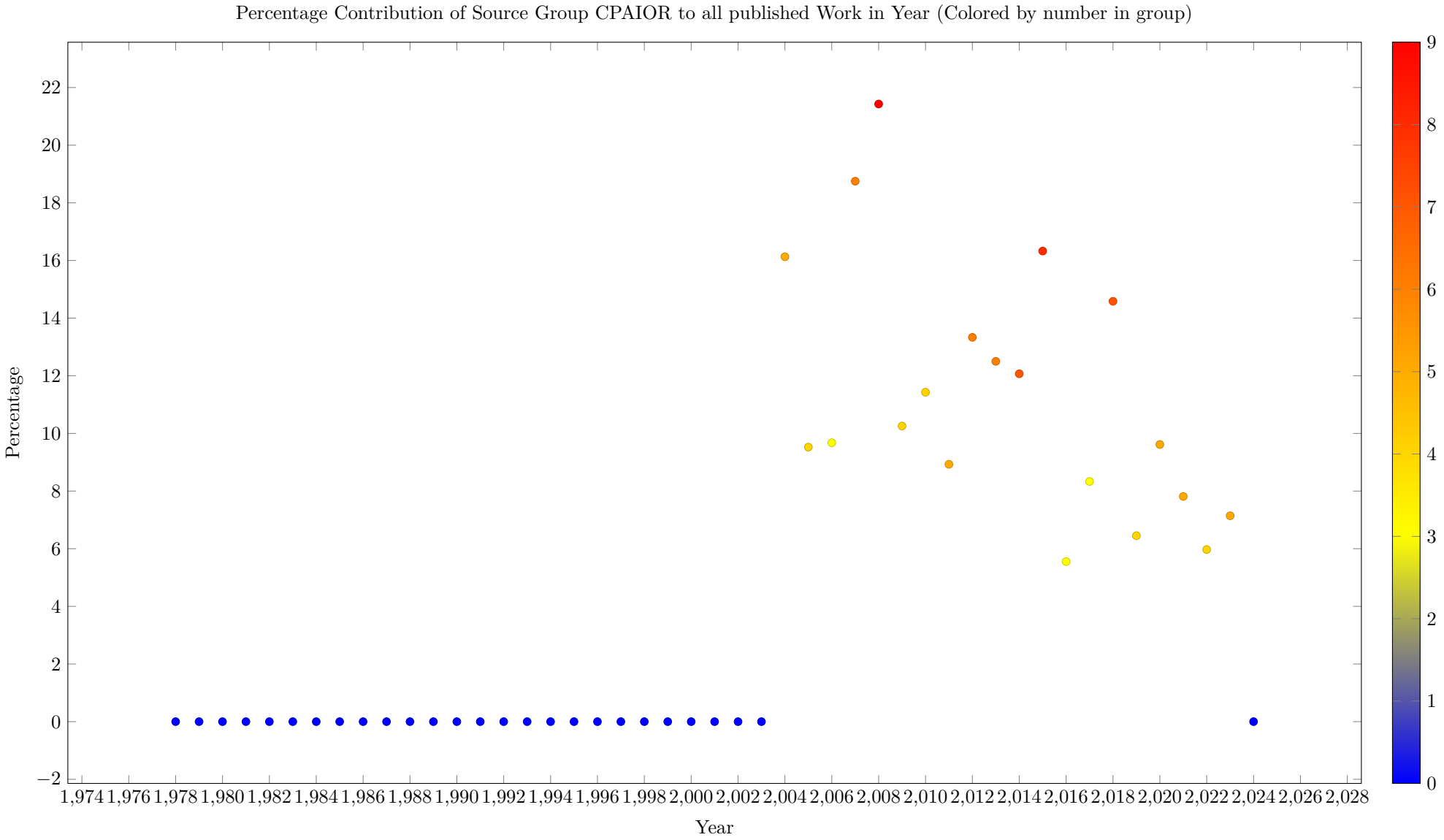
Table 14: Reference Flows Normalized

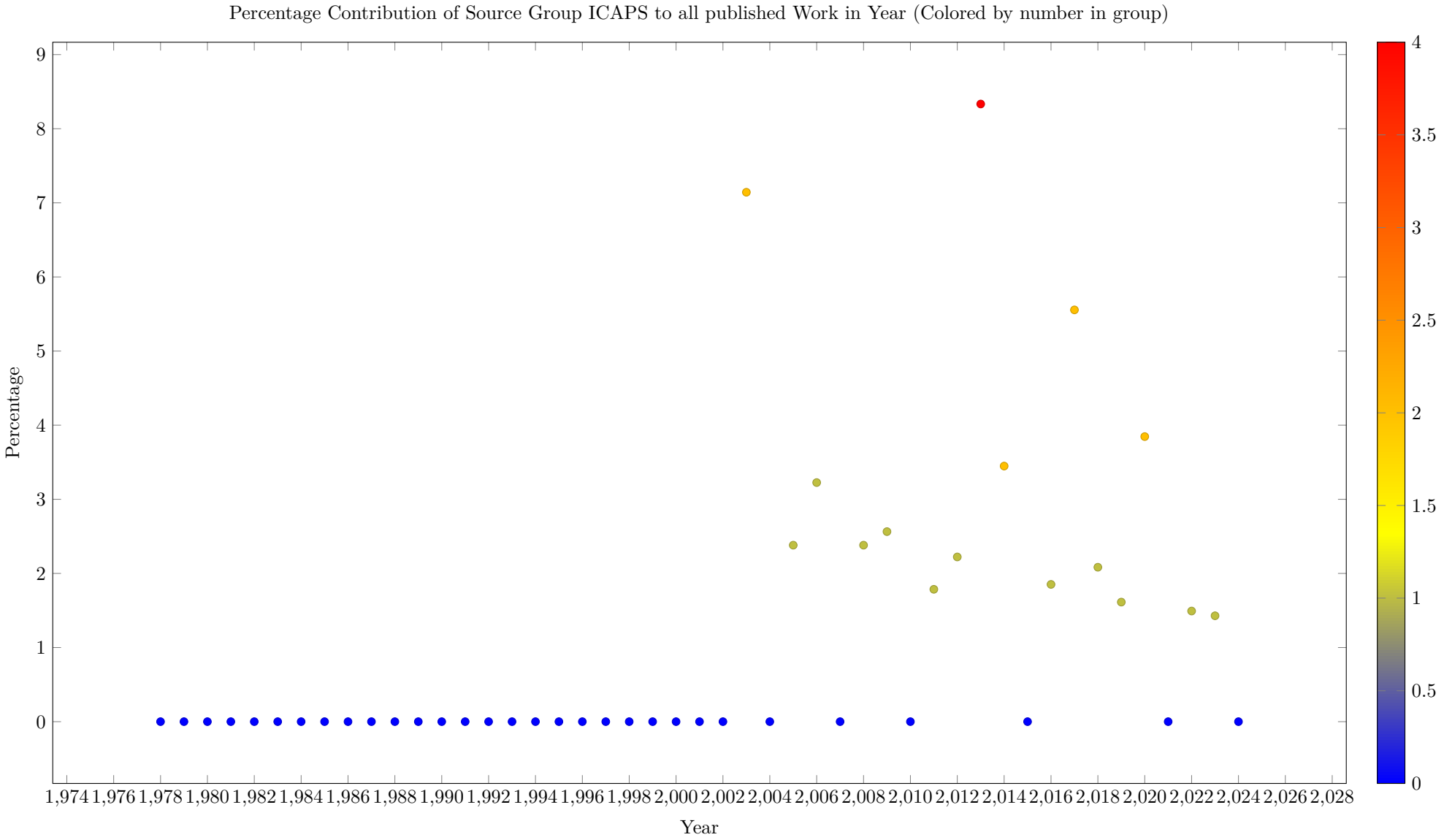
	Background	CP	CPAIOR	ICAPS	AAAI	IJCAI	OtherConf	Constraints	EJOR	InformsJC	AIJournal	ORJournal	Preprint	OtherJournal	Book	Inbook	Incoll
Background	3.68	0.26	0.07				0.03	0.59	0.58	1.58	0.22	0.85		0.18	3.49	0.20	
CP	2.04	0.73	0.52	0.07	0.01	0.03	0.08	0.64	0.14	0.68	0.65	0.21		0.15	5.11	0.07	0.30
CPAIOR	2.21	0.80	0.67	0.17	0.04	0.03	0.13	0.99	0.46	0.81	0.32	0.41	0.06	0.19	6.80	0.13	0.19
ICAPS	0.40	0.10															
OtherConf	1.13	0.20	0.15				0.08	0.35	0.26	0.35	0.46	0.20		0.14	1.71	0.10	0.07
Constraints	3.12	0.93	0.89	0.19			0.15	1.09	0.33	1.03	0.81	0.50		0.34	9.57	0.14	0.21
EJOR	4.51	0.05	0.03				0.02	0.66	2.05	1.92	0.89	0.83		0.35		0.20	0.31
InformsJC	5.25	0.51	0.38				0.02	1.30	2.02	2.91	0.61	0.95		0.35	12.90	0.14	0.32
AIJournal	3.65	0.36	0.18	0.21			0.26	0.51	1.34	0.77	3.63	0.28		0.50		0.21	
ORJournal	3.45	0.46	0.26				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	0.14	0.07			0.06	0.59	0.79	0.80	0.72	0.49		0.36	2.52	0.07	0.15
Inbook	5.01	0.26	0.32				0.10	0.69	0.75	1.68	0.93	0.93		0.30	6.52	0.38	
Incoll	3.02	0.15					0.14	0.64	1.56	0.32	2.38	0.88		0.15	5.00	0.22	

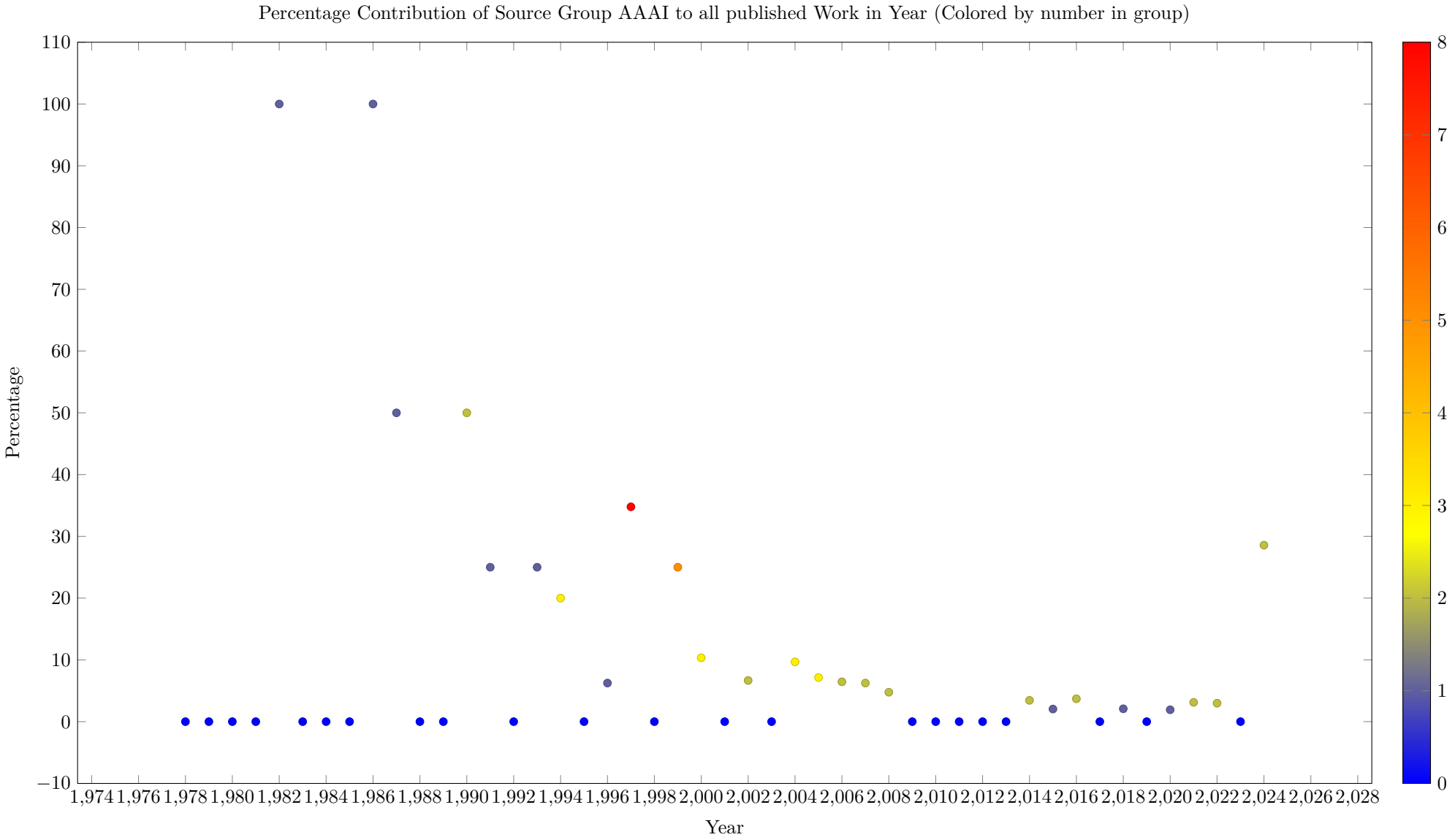
16 Contribution of Source Group to Total Works per Year

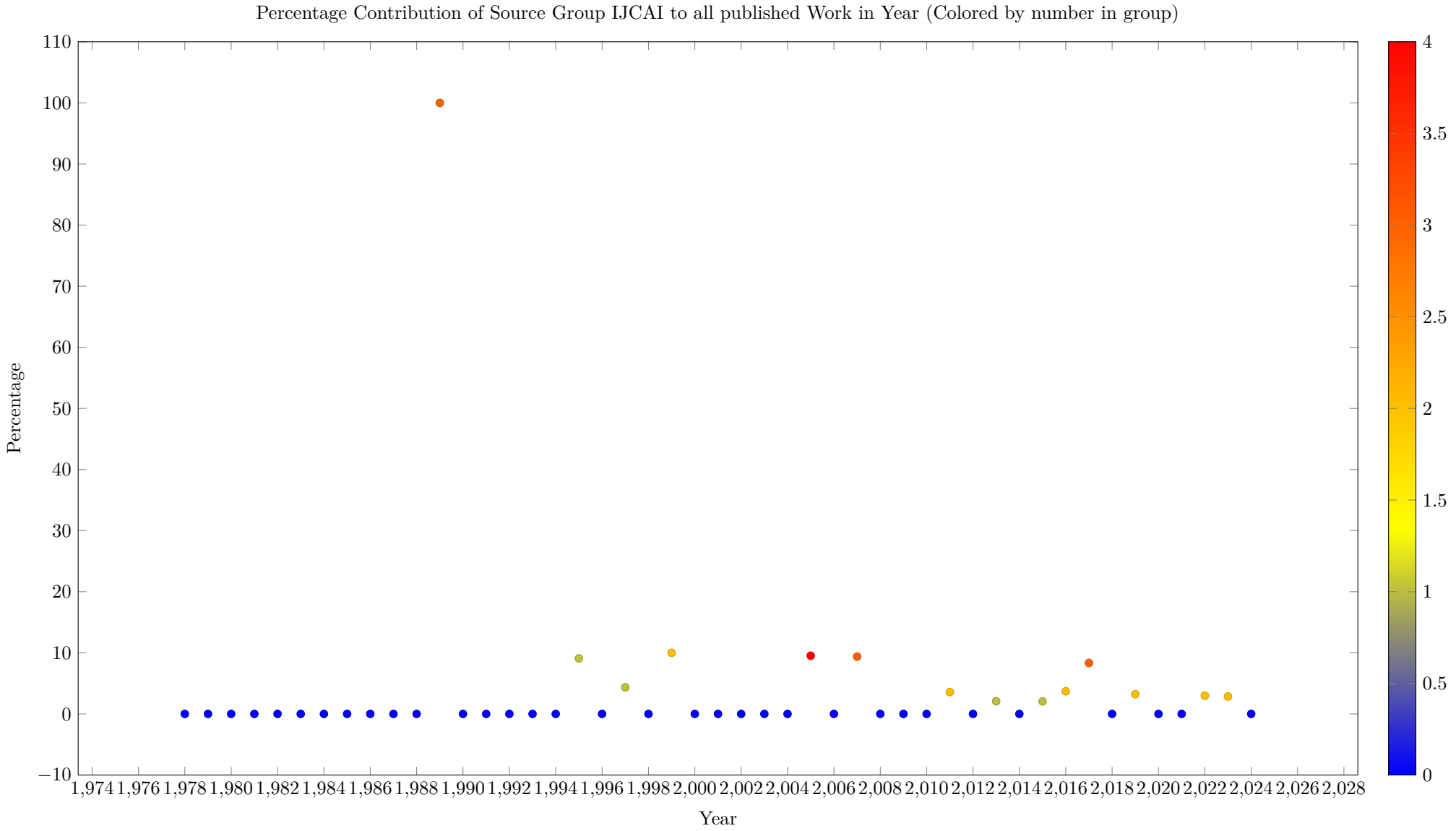
The following plots show the percentage of works published in a year belonging to a specific source group. This plot helps to understand how important that group is to the field over time


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
22
20
18
16
14
12
10
8
6
4
2
0
−2
1,974 1,976 1,978 1,980 1,982 1,984 1,986 1,988 1,990 1,992 1,994 1,996 1,998 2,000 2,002 2,004 2,006 2,008 2,010 2,012 2,014 2,016 2,018 2,020 2,022 2,024 2,026 2,028
Year
9
8
7
6
5
4
3
2
1
0


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


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


Percentage Contribution of Source Group IJCAI to all published Work in Year (Colored by number in group)
Percentage
110
100
90
80
70
60
50
40
30
20
10
0
−10
Year
1,974 1,976 1,978 1,980 1,982 1,984 1,986 1,988 1,990 1,992 1,994 1,996 1,998 2,000 2,002 2,004 2,006 2,008 2,010 2,012 2,014 2,016 2,018 2,020 2,022 2,024 2,026 2,028
4
3.5
3
2.5
2
1.5
1
0.5
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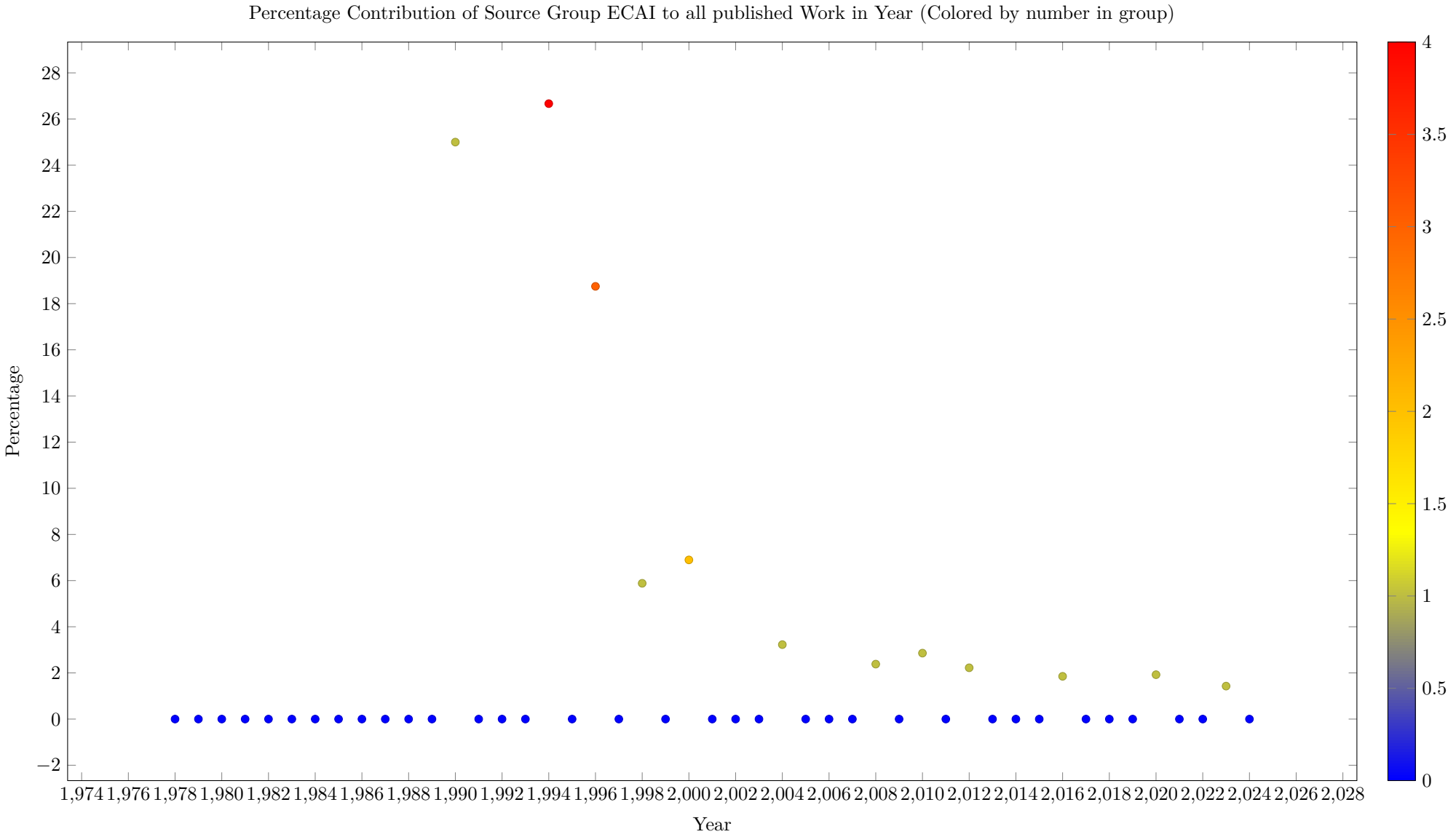
Percentage Contribution of Source Group ECAI to all published Work in Year (Colored by number in group)
Percentage
28
26
24
22
20
18
16
14
12
10
8
6
4
2
0
−2
1,974 1,976 1,978 1,980 1,982 1,984 1,986 1,988 1,990 1,992 1,994 1,996 1,998 2,000 2,002 2,004 2,006 2,008 2,010 2,012 2,014 2,016 2,018 2,020 2,022 2,024 2,026 2,028
Year
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3.5
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2.5
2
1.5
1
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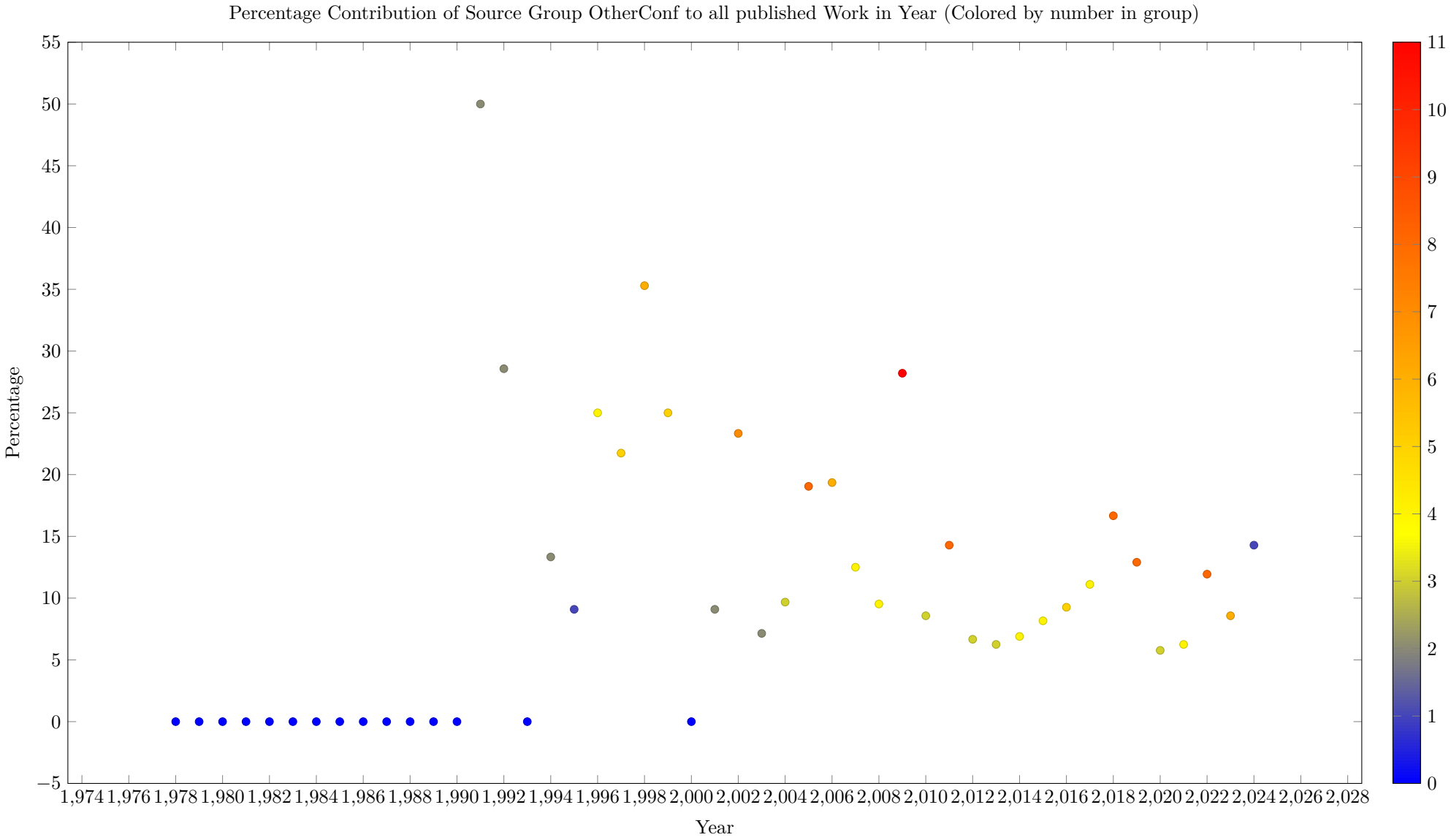
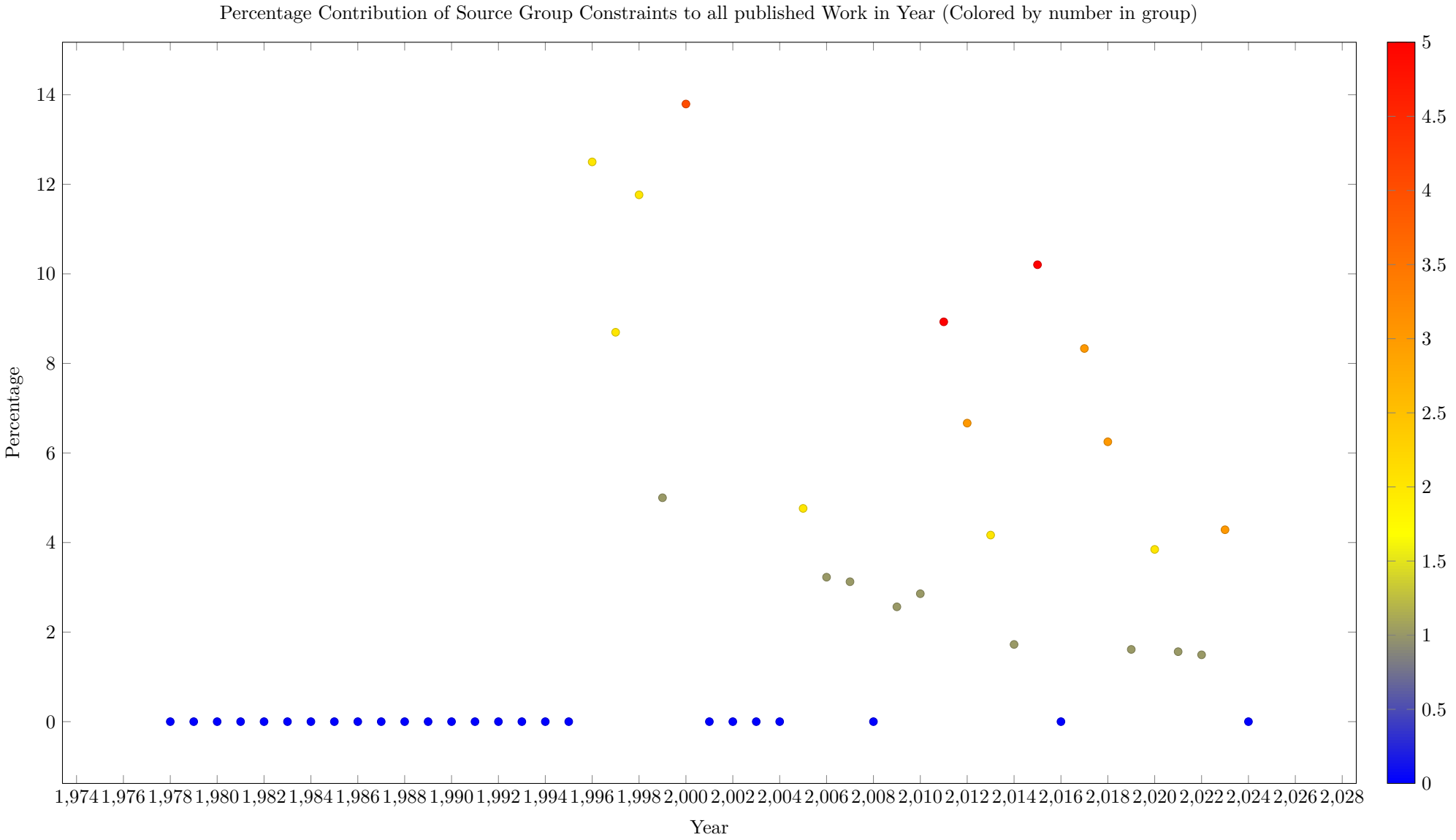

Percentage Contribution of Source Group OtherConf to all published Work in Year (Colored by number in group)
Percentage
55
50
45
40
35
30
25
20
15
10
5
0
−5
1,974 1,976 1,978 1,980 1,982 1,984 1,986 1,988 1,990 1,992 1,994 1,996 1,998 2,000 2,002 2,004 2,006 2,008 2,010 2,012 2,014 2,016 2,018 2,020 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
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2
4
6
8
10
12
14
Year
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0
0.5
1
1.5
2
2.5
3
3.5
4
4.5
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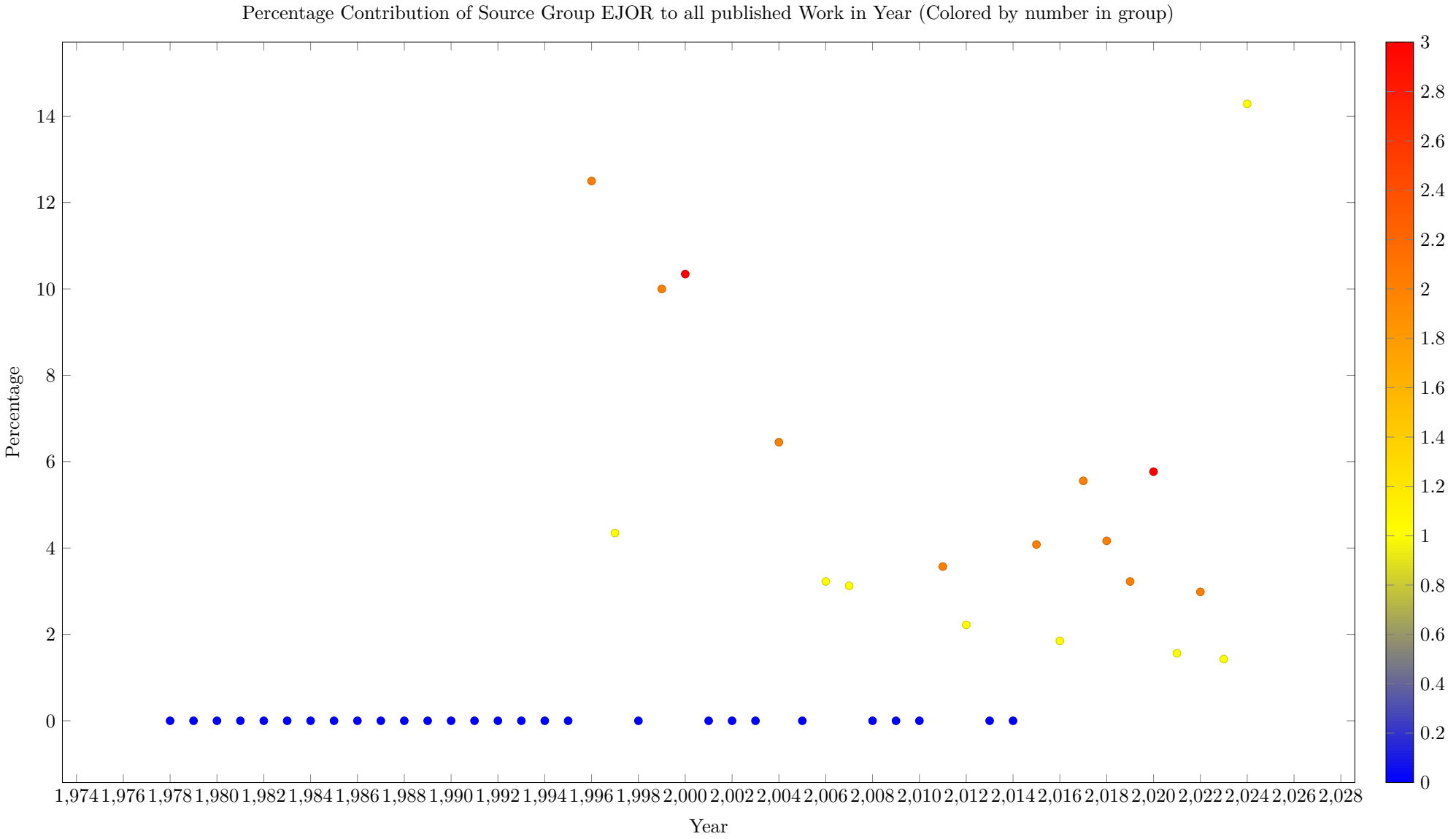
Percentage Contribution of Source Group EJOR to all published Work in Year (Colored by number in group)
Percentage
0
2
4
6
8
10
12
14
Year
1,974 1,976 1,978 1,980 1,982 1,984 1,986 1,988 1,990 1,992 1,994 1,996 1,998 2,000 2,002 2,004 2,006 2,008 2,010 2,012 2,014 2,016 2,018 2,020 2,022 2,024 2,026 2,028
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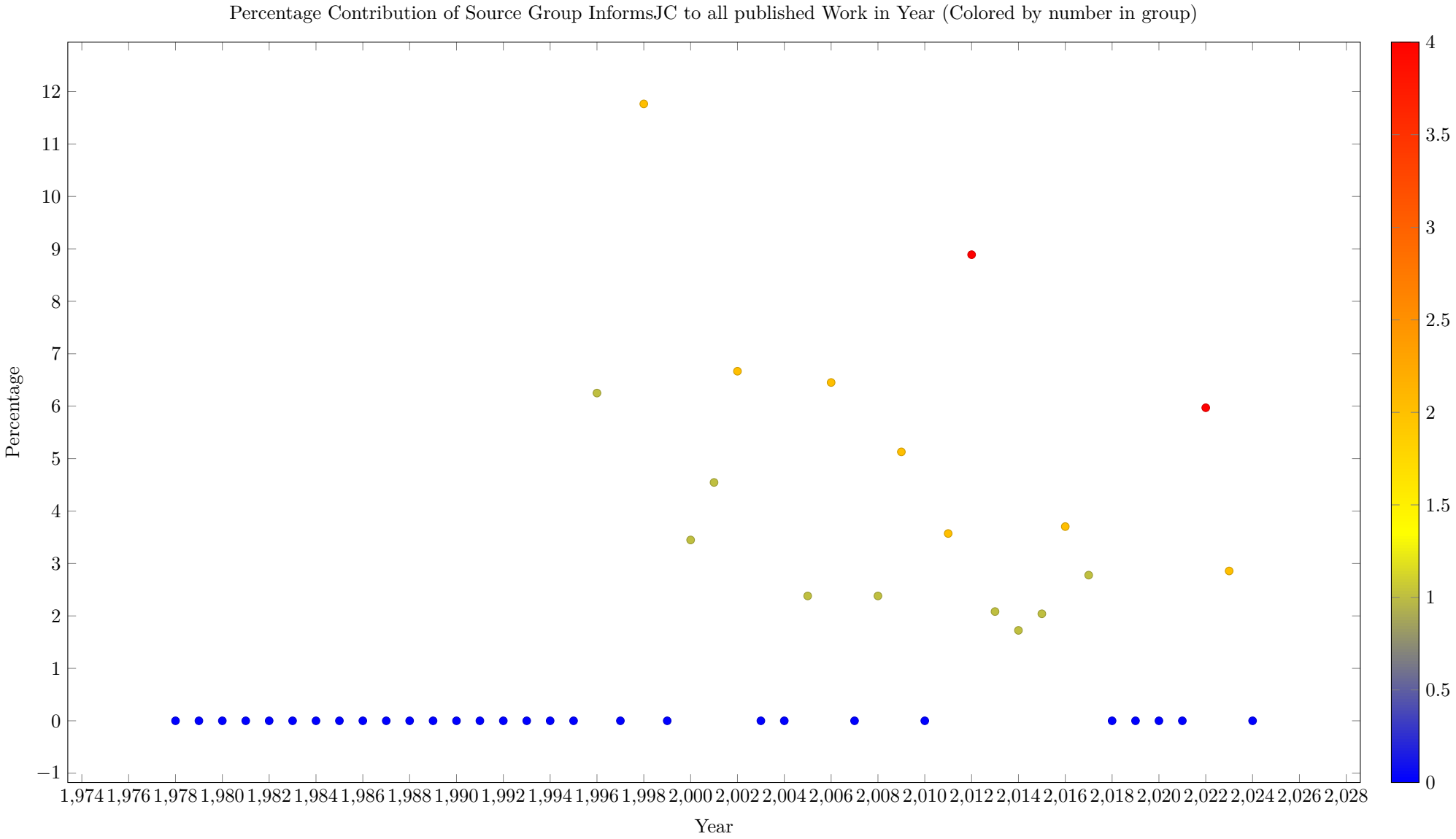
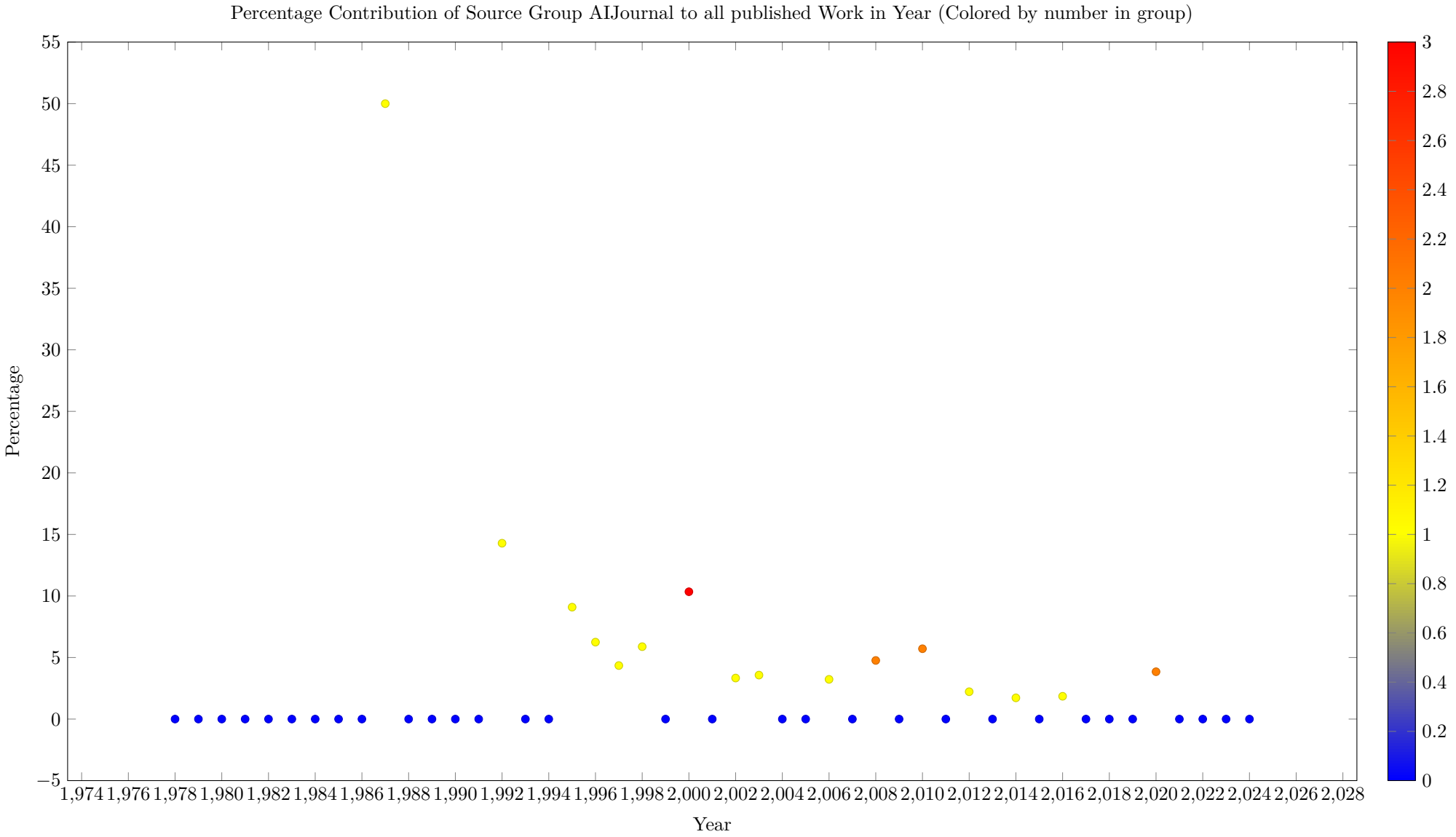

Percentage Contribution of Source Group InformsJC to all published Work in Year (Colored by number in group)
Percentage
Year
12
11
10
9
8
7
6
5
4
3
2
1
0
−1
1,974 1,976 1,978 1,980 1,982 1,984 1,986 1,988 1,990 1,992 1,994 1,996 1,998 2,000 2,002 2,004 2,006 2,008 2,010 2,012 2,014 2,016 2,018 2,020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


Percentage Contribution of Source Group AIJournal to all published Work in Year (Colored by number in group)
Percentage
55
50
45
40
35
30
25
20
15
10
5
0
−5
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
3
2.8
2.6
2.4
2.2
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1.8
1.6
1.4
1.2
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0.6
0.4
0.2
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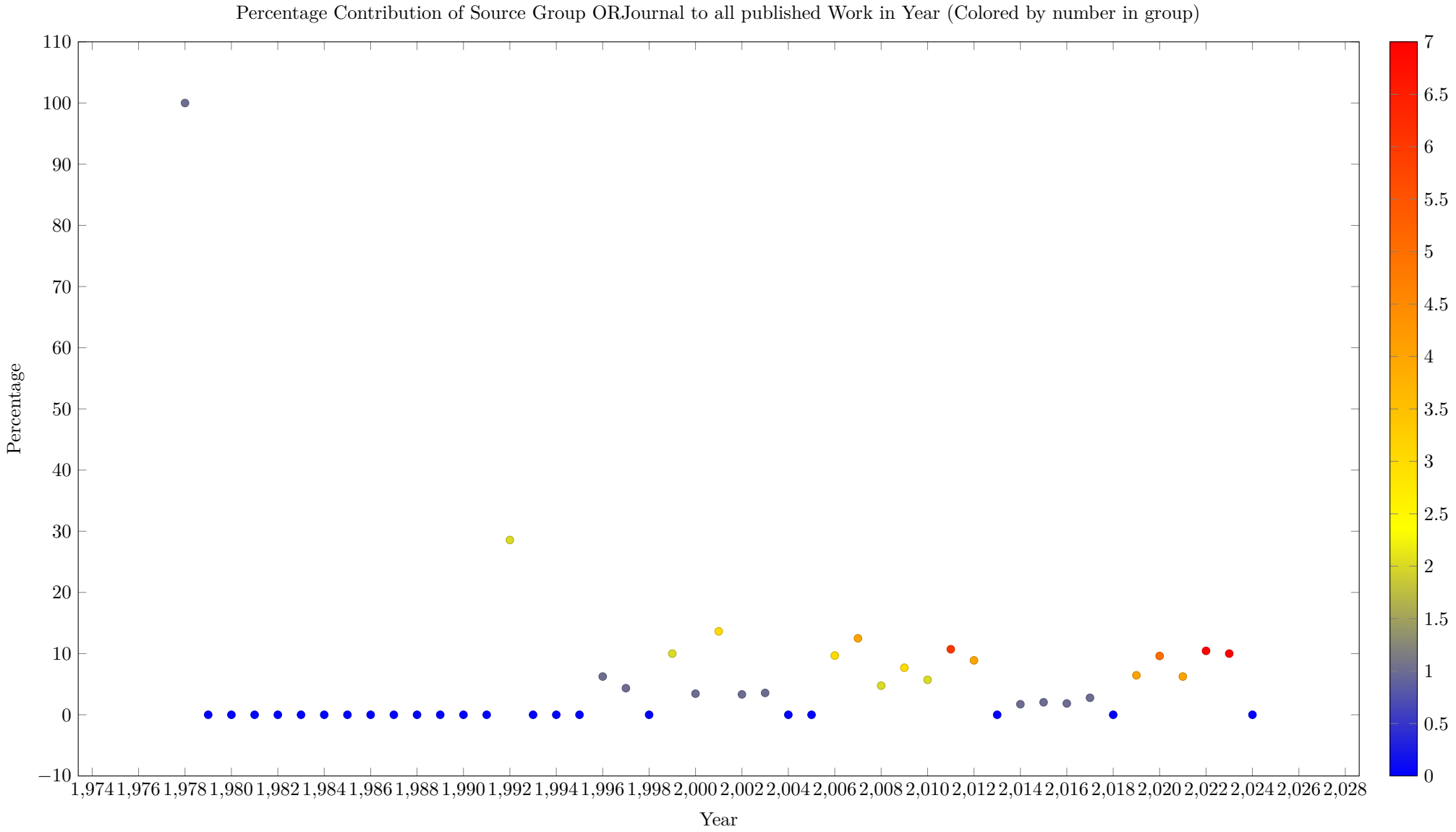
Percentage Contribution of Source Group ORJournal to all published Work in Year (Colored by number in group)
Percentage
110
100
90
80
70
60
50
40
30
20
10
0
−10
Year
1,974 1,976 1,978 1,980 1,982 1,984 1,986 1,988 1,990 1,992 1,994 1,996 1,998 2,000 2,002 2,004 2,006 2,008 2,010 2,012 2,014 2,016 2,018 2,020 2,022 2,024 2,026 2,028
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5
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2.5
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1.5
1
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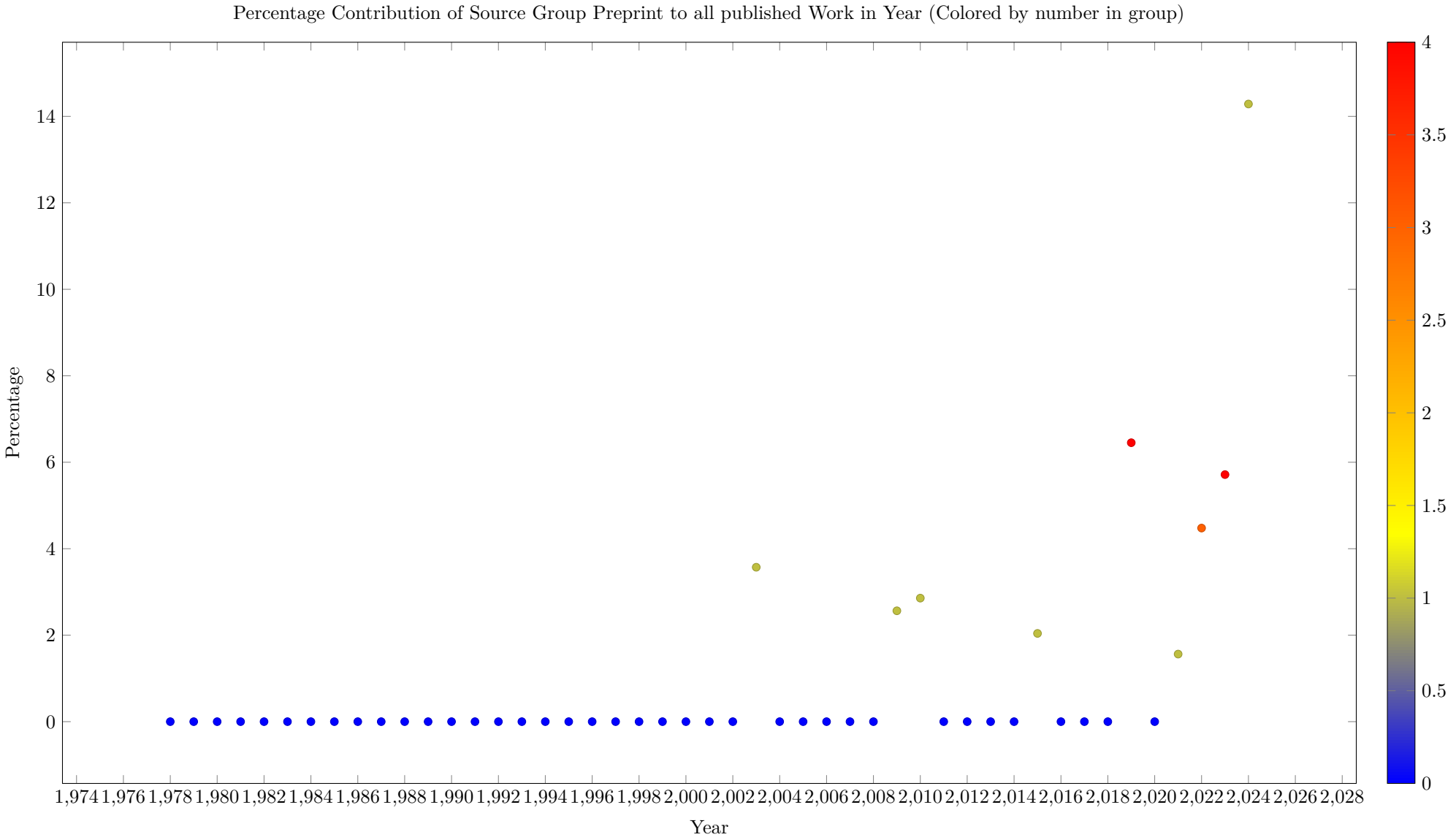
Percentage Contribution of Source Group Preprint to all published Work in Year (Colored by number in group)
Percentage
0
2
4
6
8
10
12
14
Year
1,974 1,976 1,978 1,980 1,982 1,984 1,986 1,988 1,990 1,992 1,994 1,996 1,998 2,000 2,002 2,004 2,006 2,008 2,010 2,012 2,014 2,016 2,018 2,020 2,022 2,024 2,026 2,028
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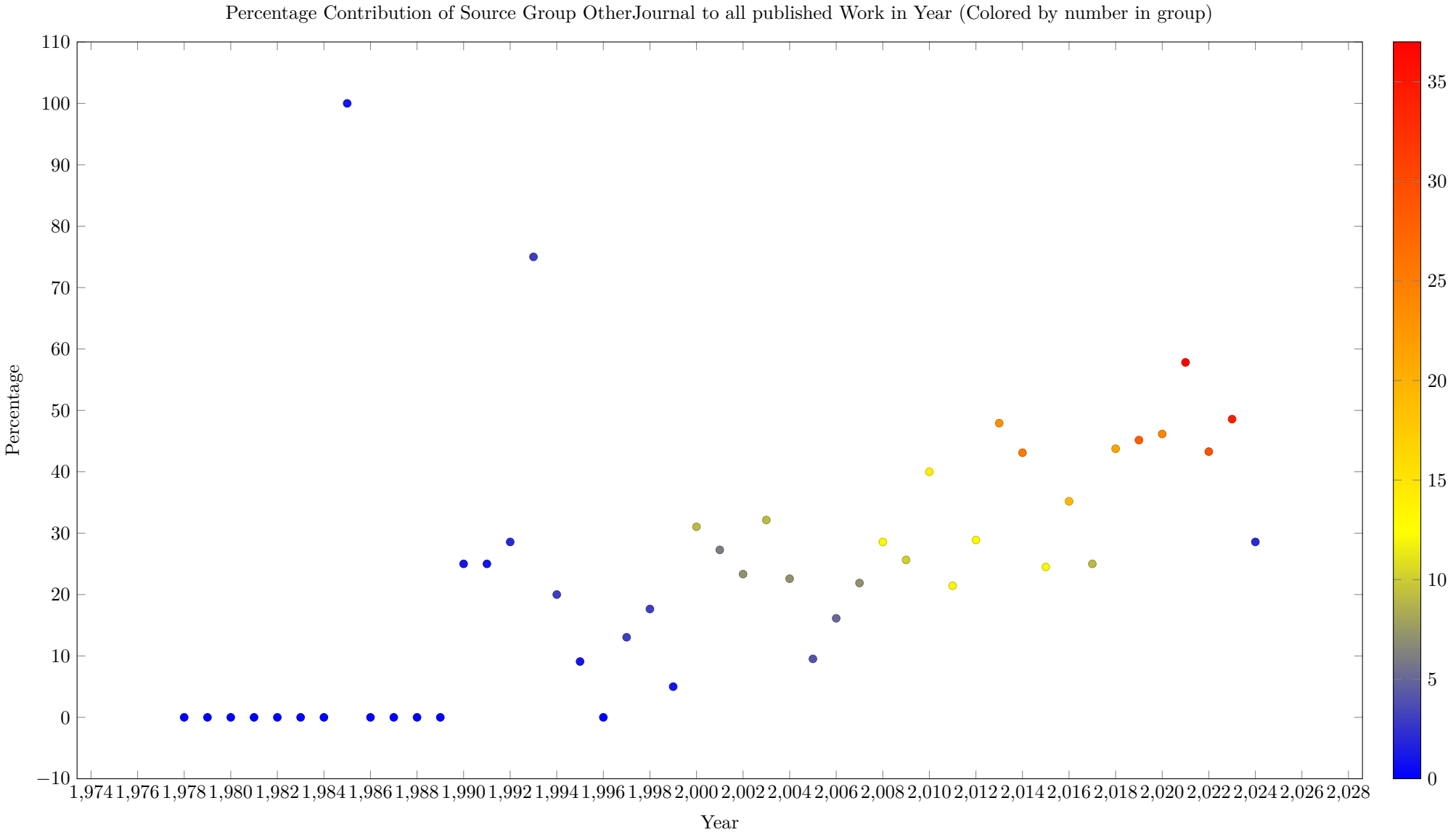
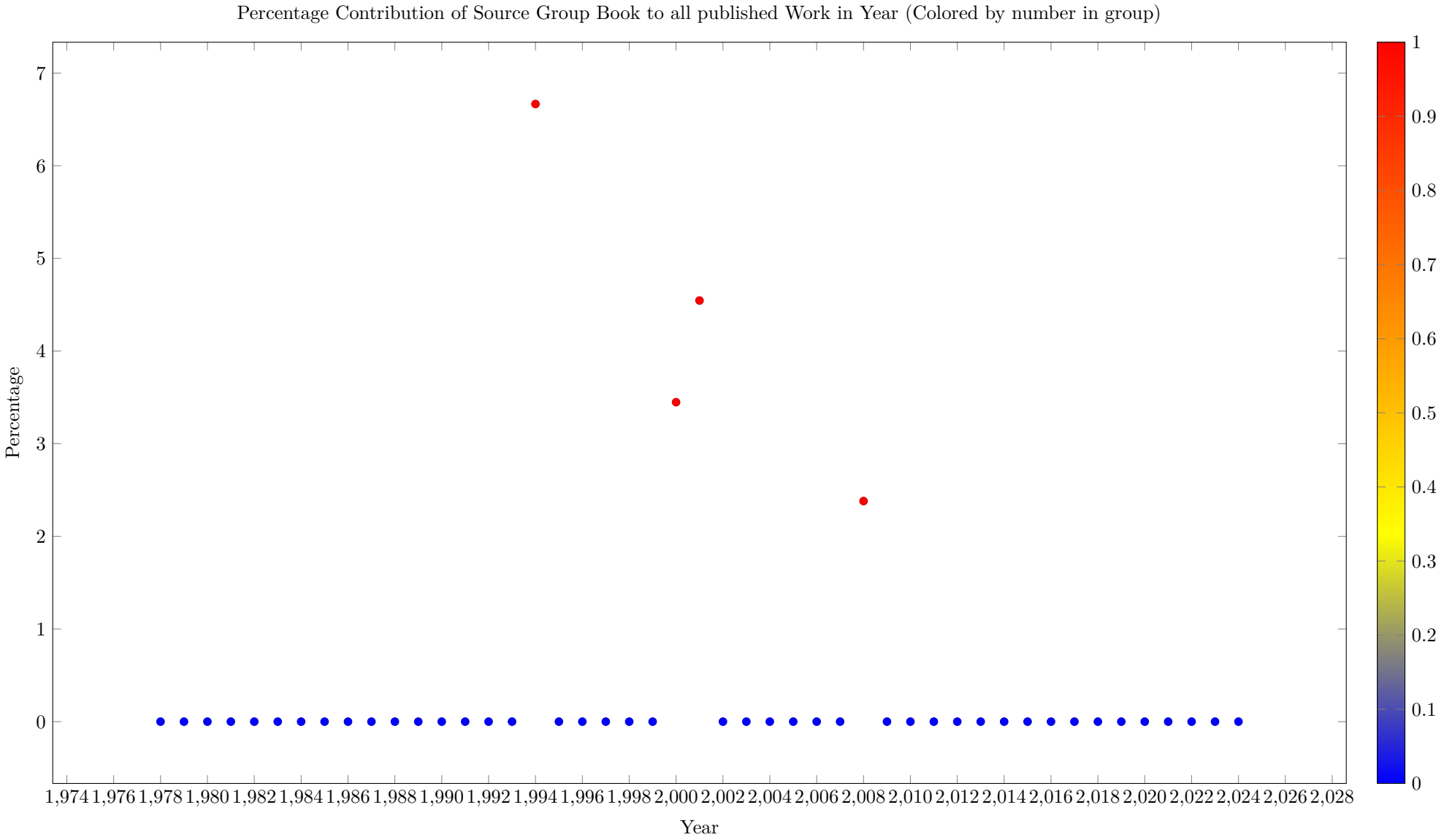
1.5
2
2.5
3
3.5
4


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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2
3
4
5
6
7
Year
1,974 1,976 1,978 1,980 1,982 1,984 1,986 1,988 1,990 1,992 1,994 1,996 1,998 2,000 2,002 2,004 2,006 2,008 2,010 2,012 2,014 2,016 2,018 2,020 2,022 2,024 2,026 2,028
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0.9
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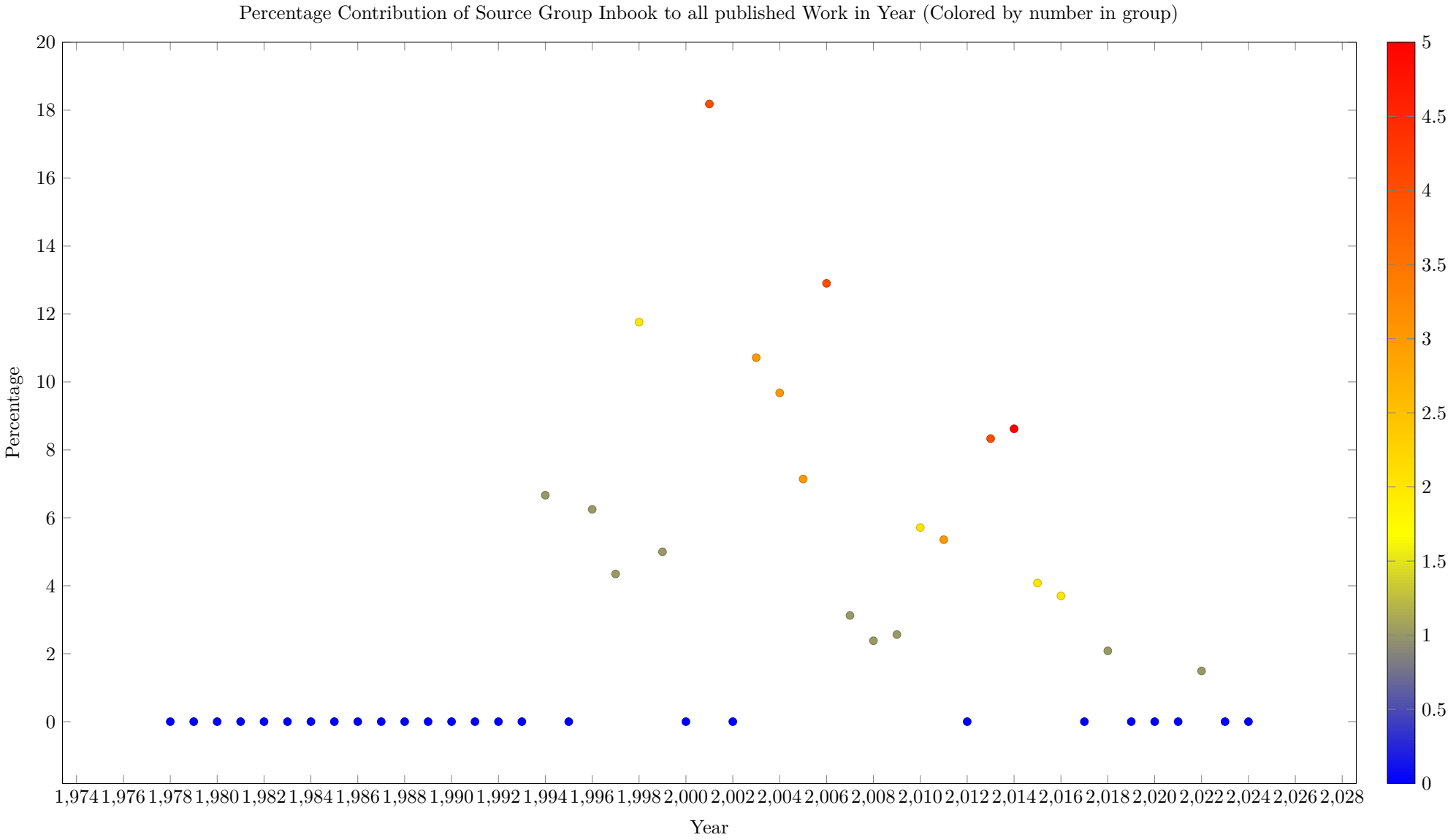
Percentage Contribution of Source Group Inbook to all published Work in Year (Colored by number in group)
Percentage
0
2
4
6
8
10
12
14
16
18
20
Year
1,974 1,976 1,978 1,980 1,982 1,984 1,986 1,988 1,990 1,992 1,994 1,996 1,998 2,000 2,002 2,004 2,006 2,008 2,010 2,012 2,014 2,016 2,018 2,020 2,022 2,024 2,026 2,028
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1.5
2
2.5
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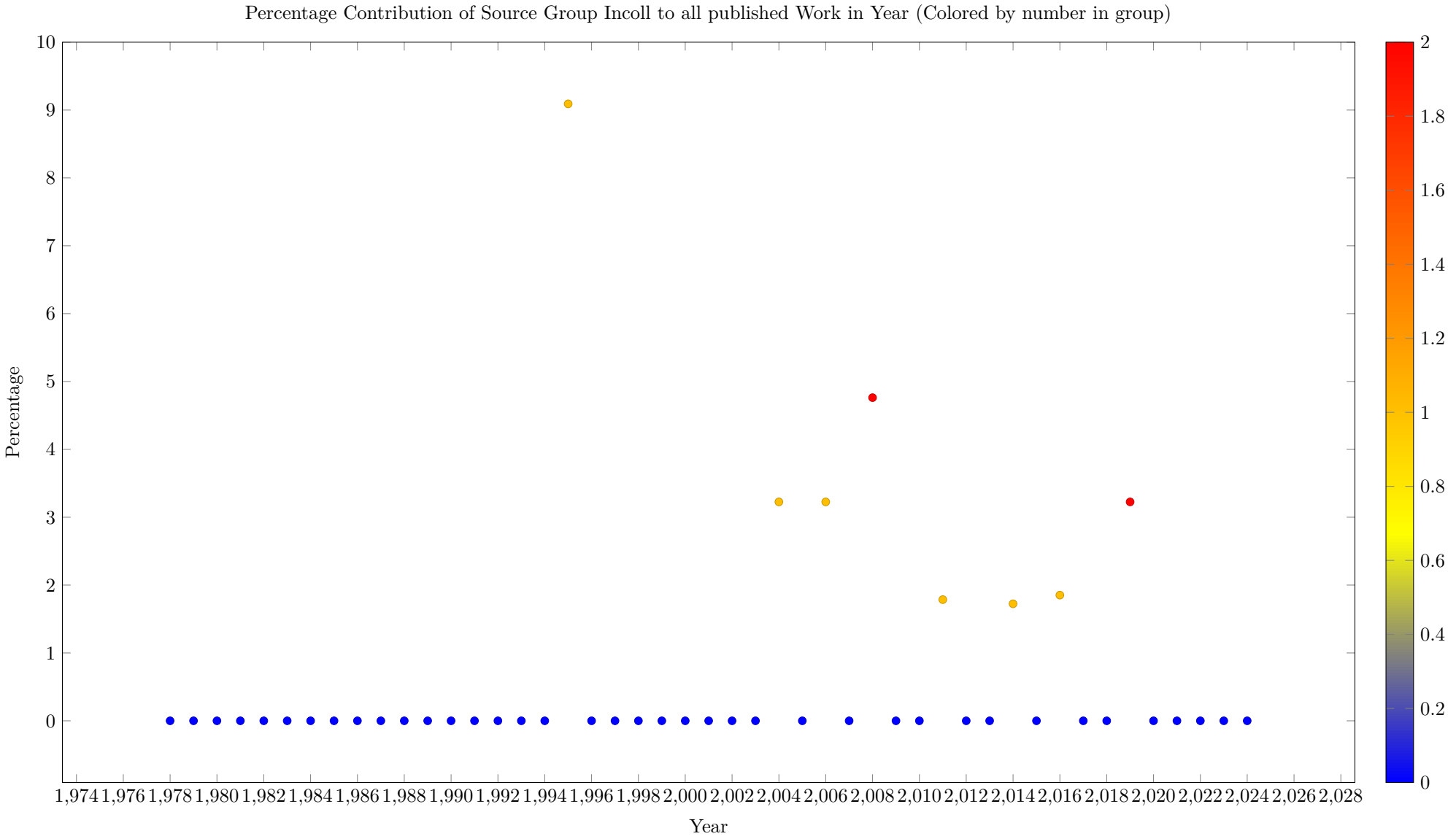
3.5
4
4.5
5


Percentage Contribution of Source Group Incoll to all published Work in Year (Colored by number in group)
Percentage
Year
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2
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4
5
6
7
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1,990
1,992
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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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0.6
0.8
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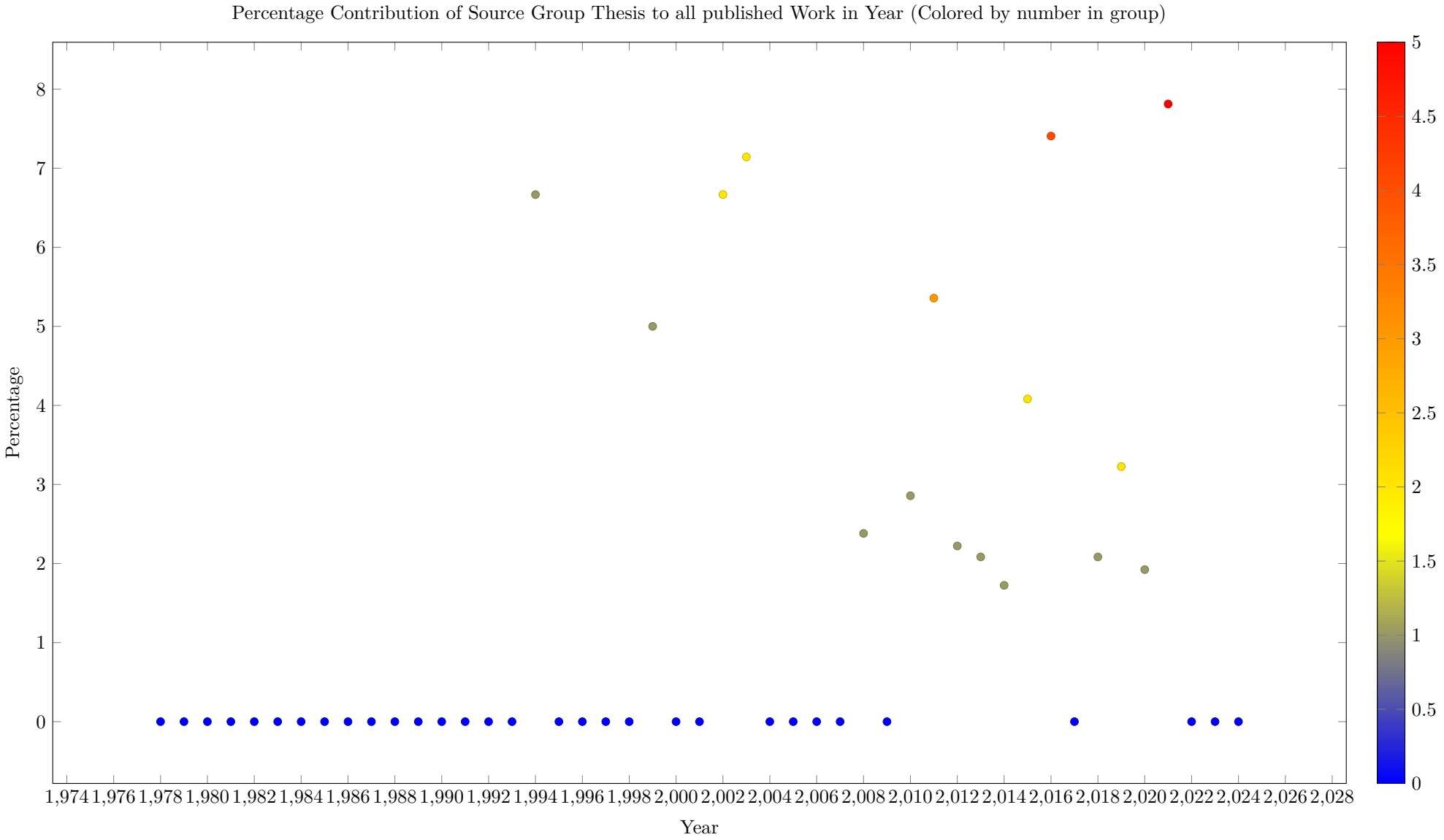
1.2
1.4
1.6
1.8
2


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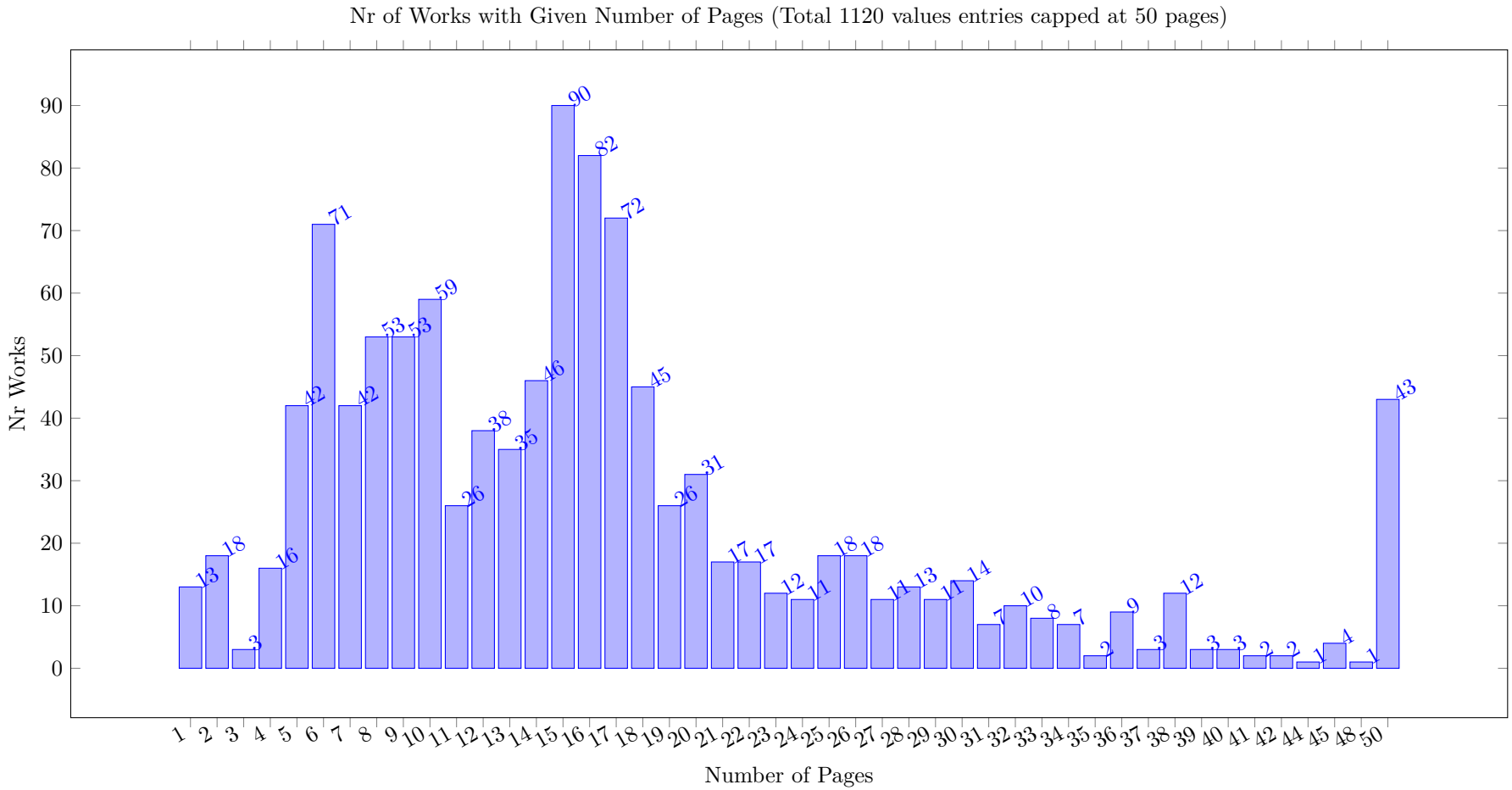
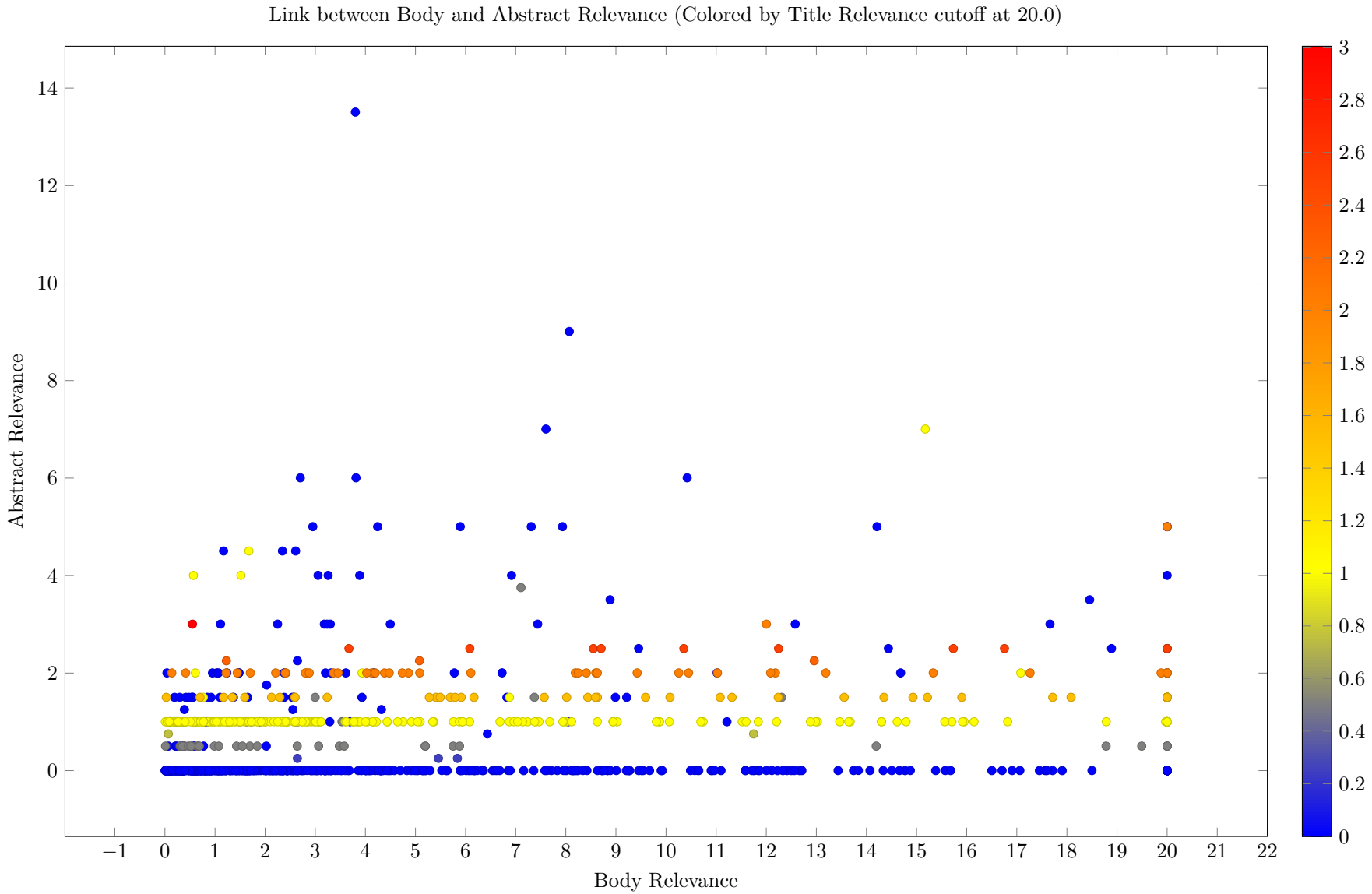
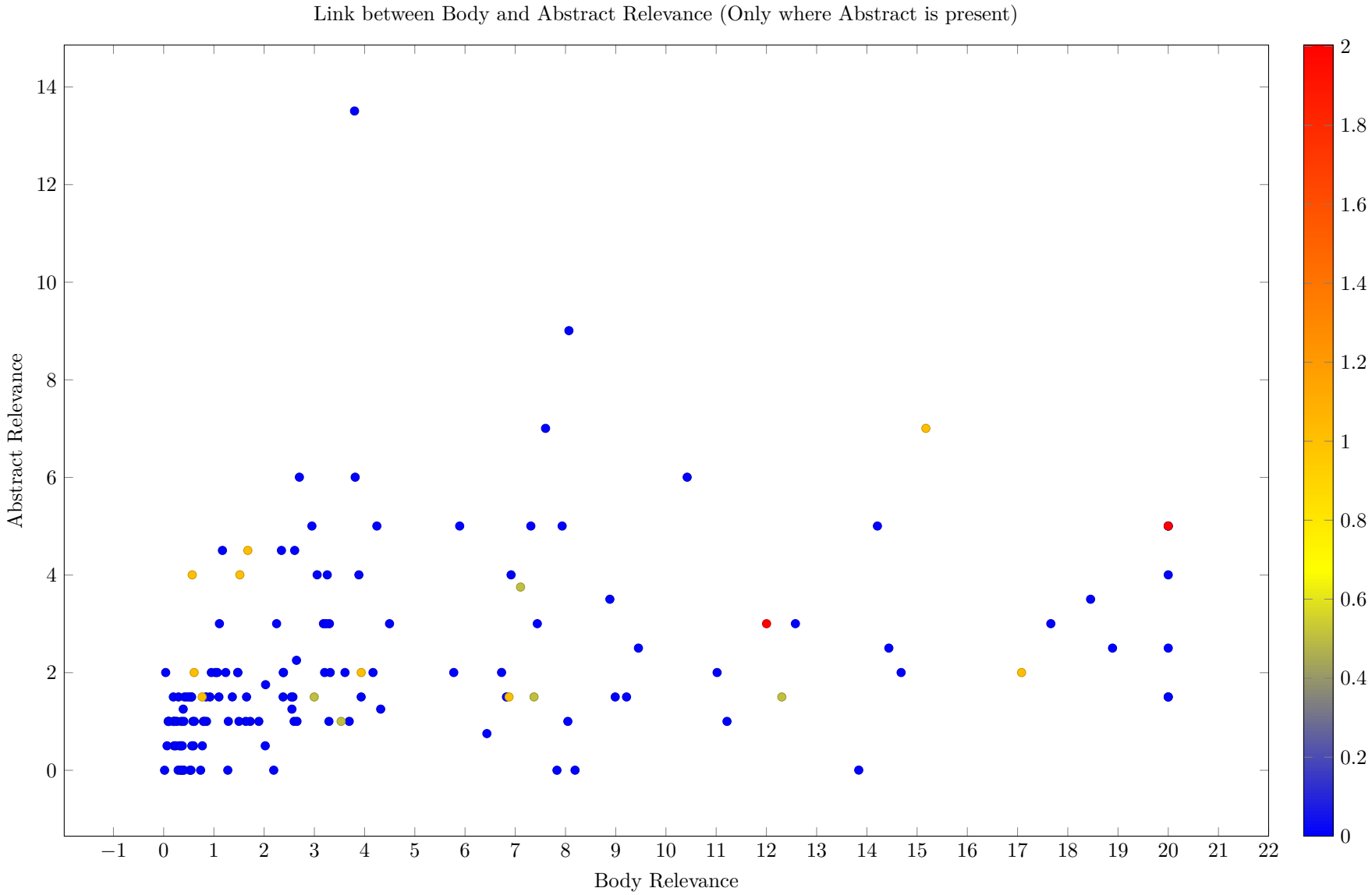
1.5
2
2.5
3
3.5
4
4.5
5

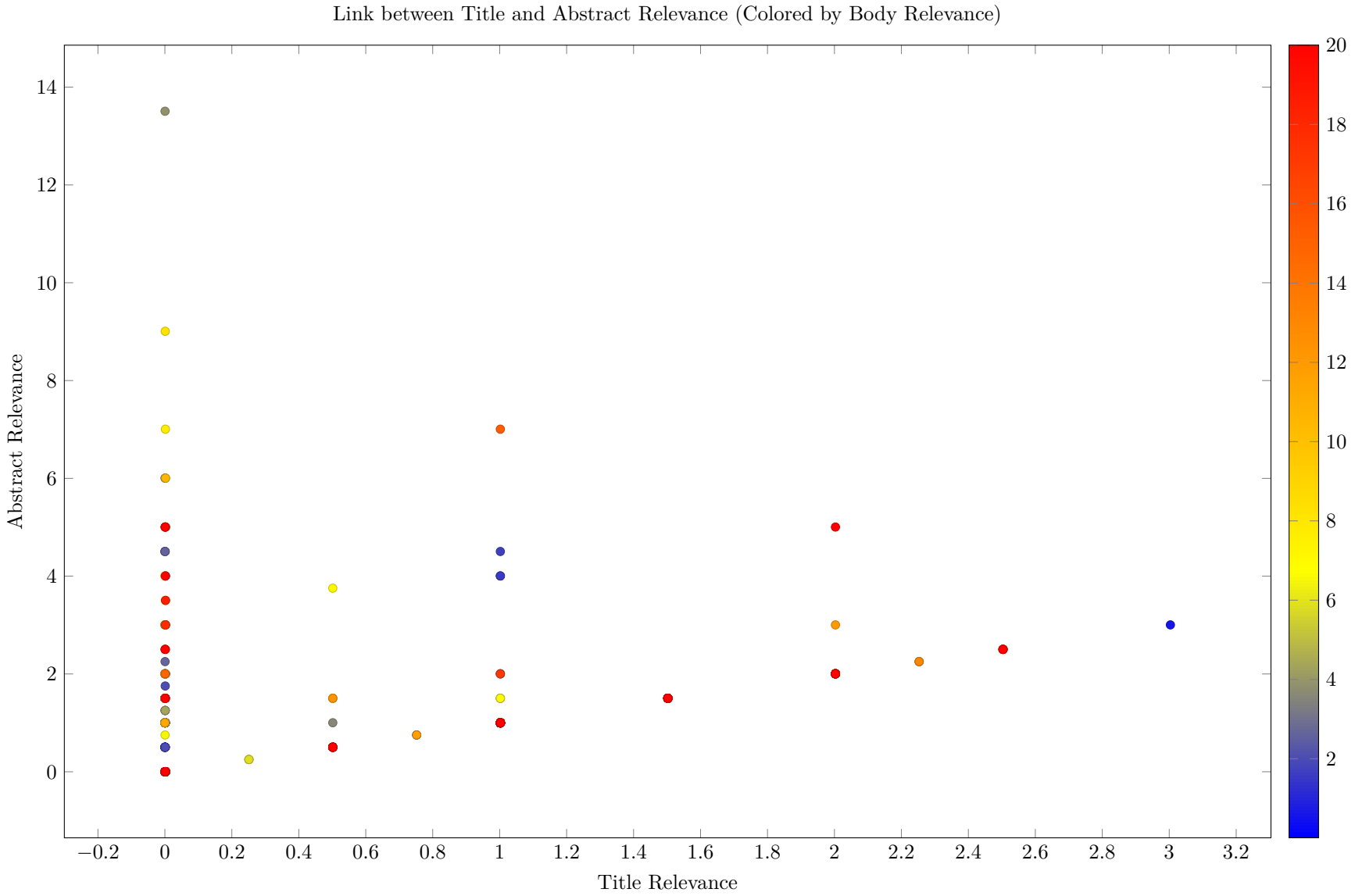
17 Page Length Distribution



18 Relevance Distribution




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


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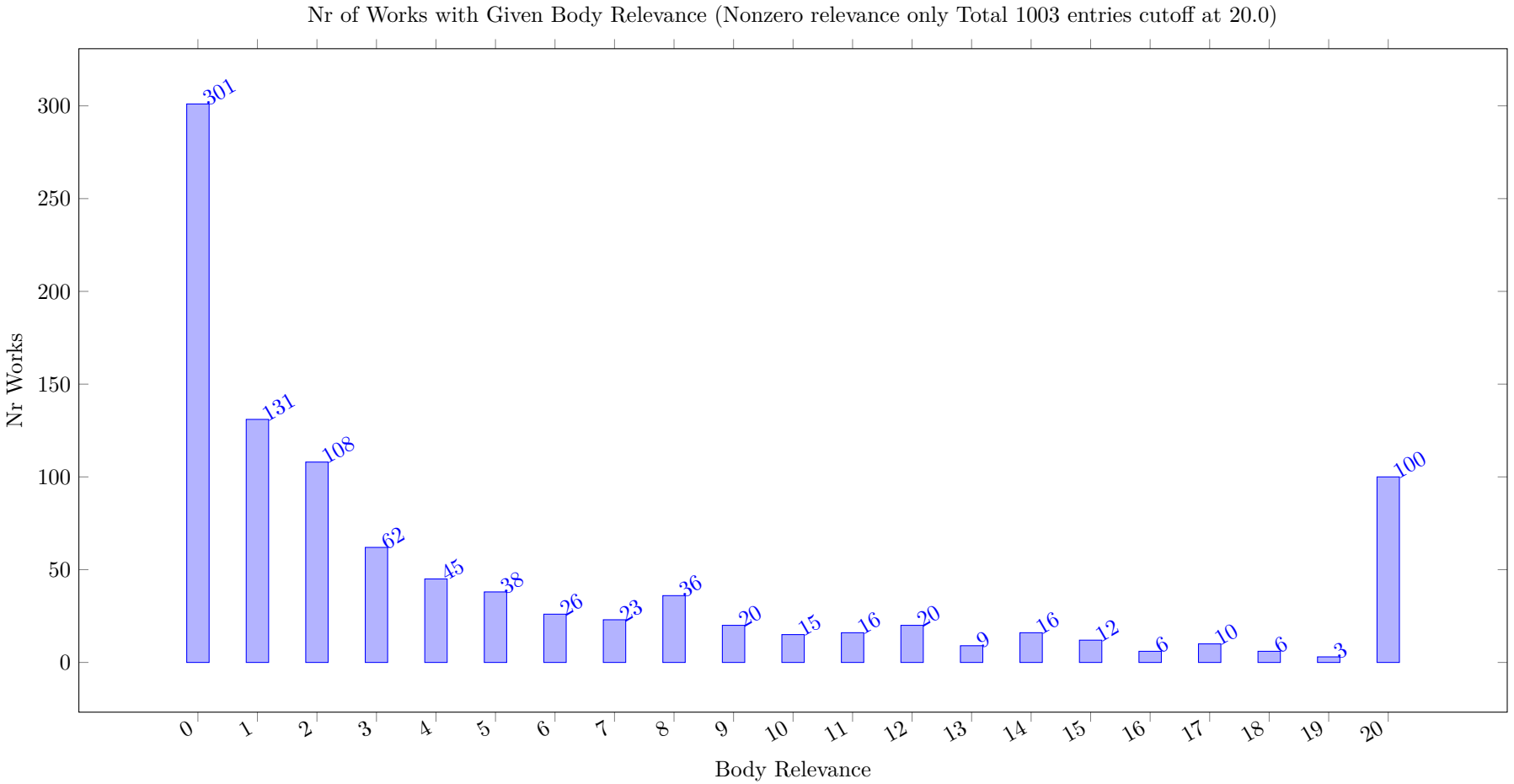
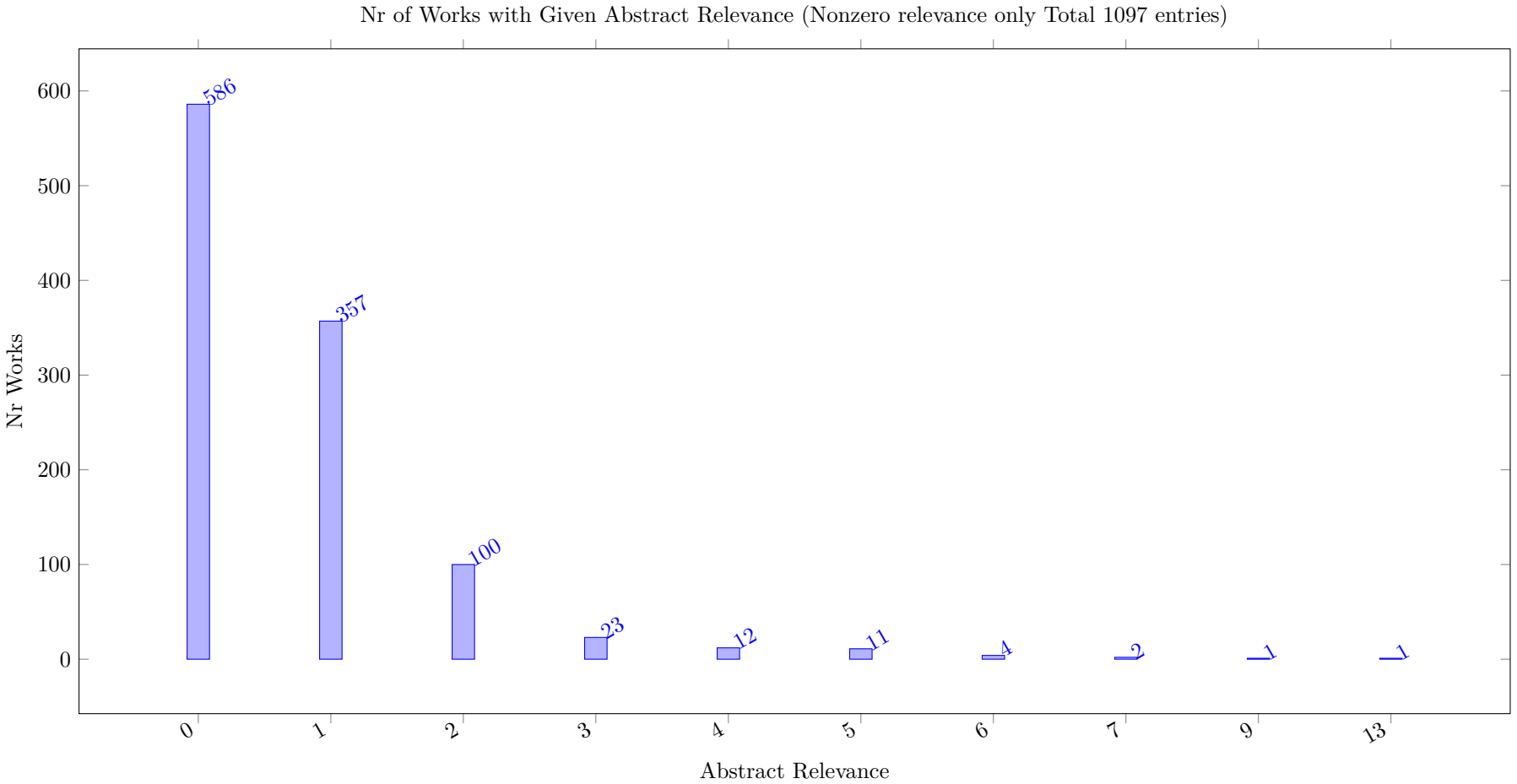
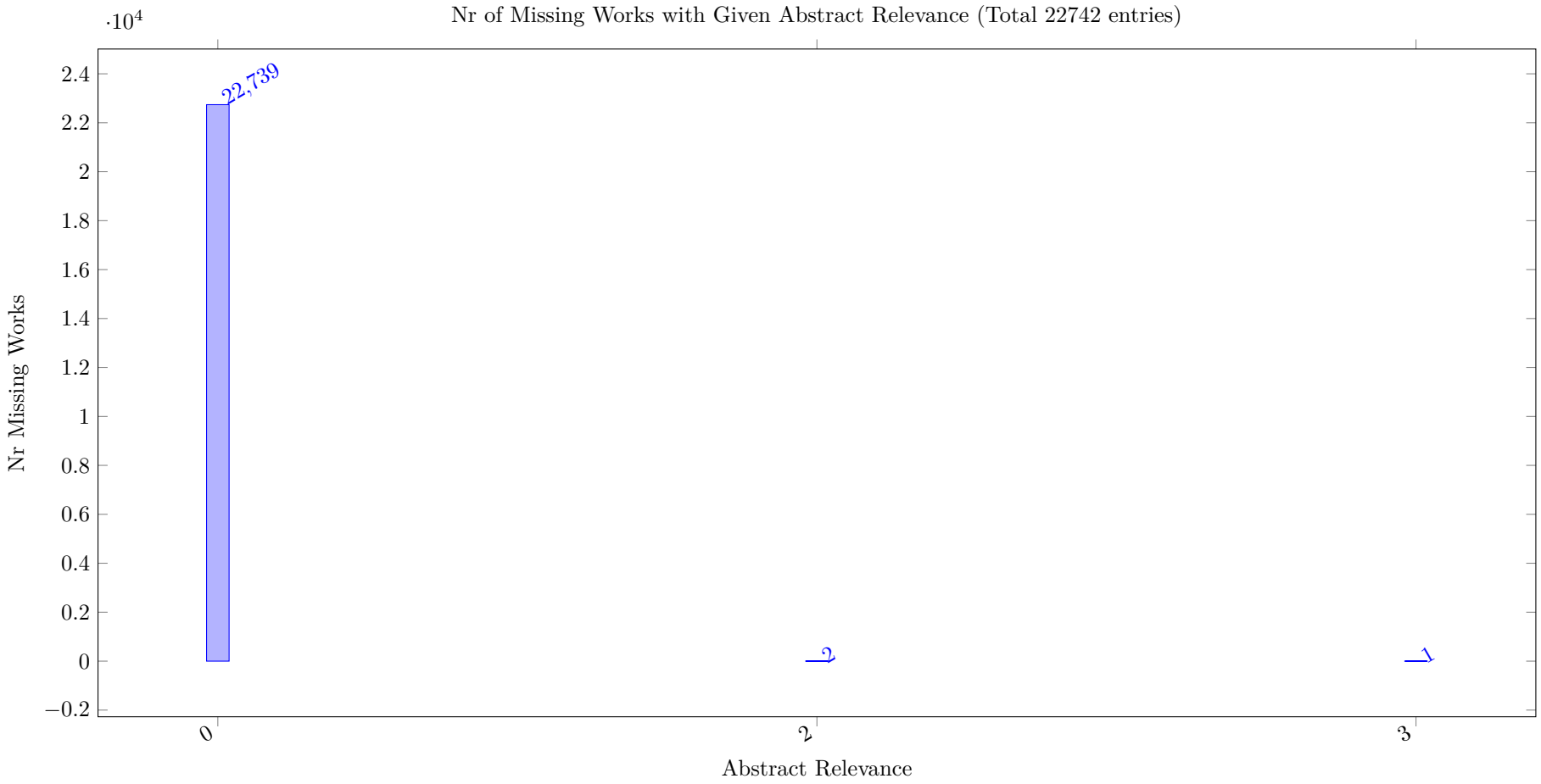
2
4
6
8
10
12
14
−0.2
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8
2
2.2
2.4
2.6
2.8
3
3.2
2
4
6
8
10
12
14
16
18
20


Nr of Works with Given Body Relevance (Nonzero relevance only Total 1003 entries cutoff at 20.0)
Nr Works
0
50
100
150
200
250
300
301
131
108
62
45
38
26
23
36
20
15
16
20
9
16
12
6
10
6
3
100
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 1097 entries)
Nr Works
600
500
400
300
200
100
0
586
357
100
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 22742 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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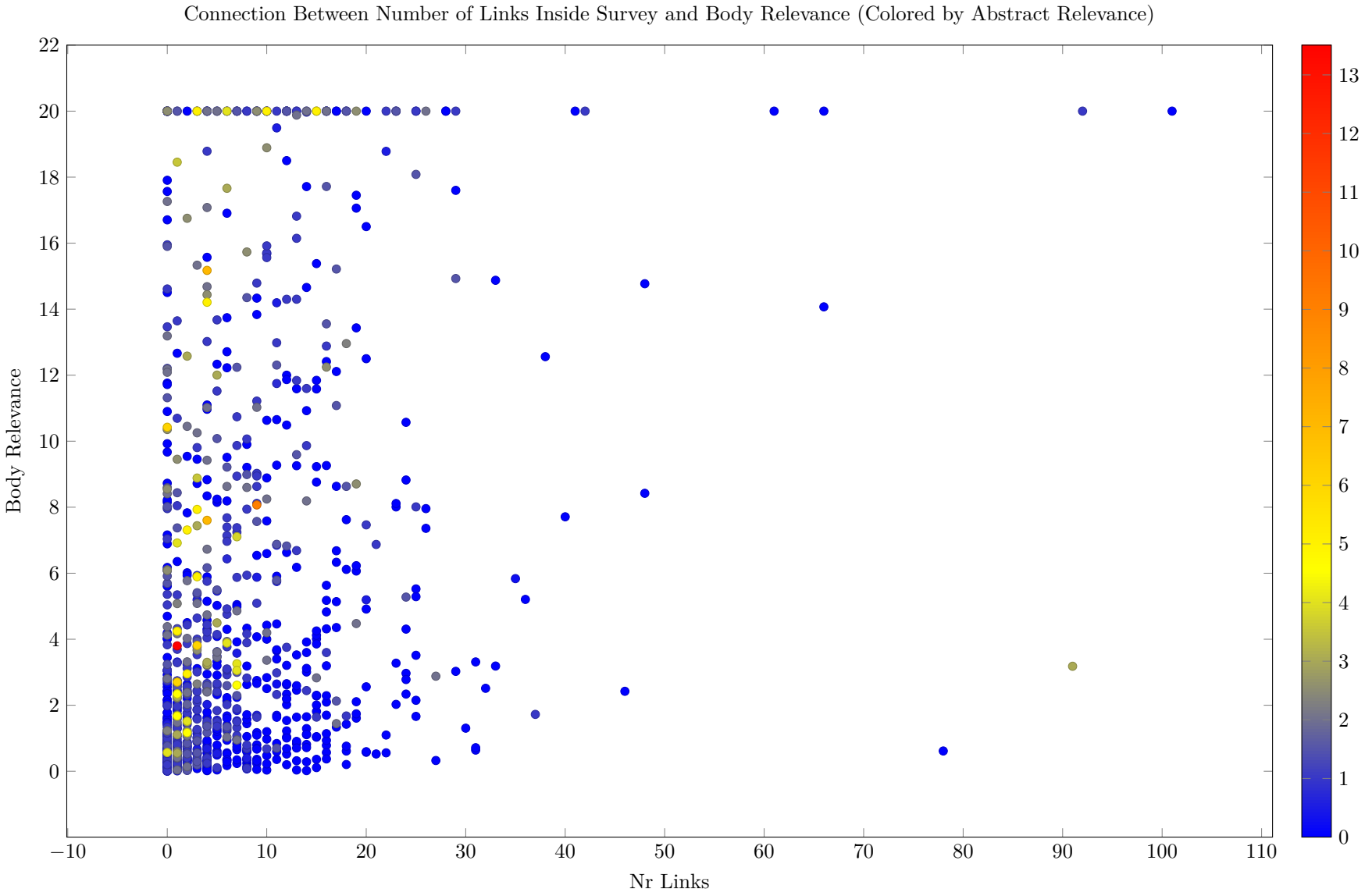
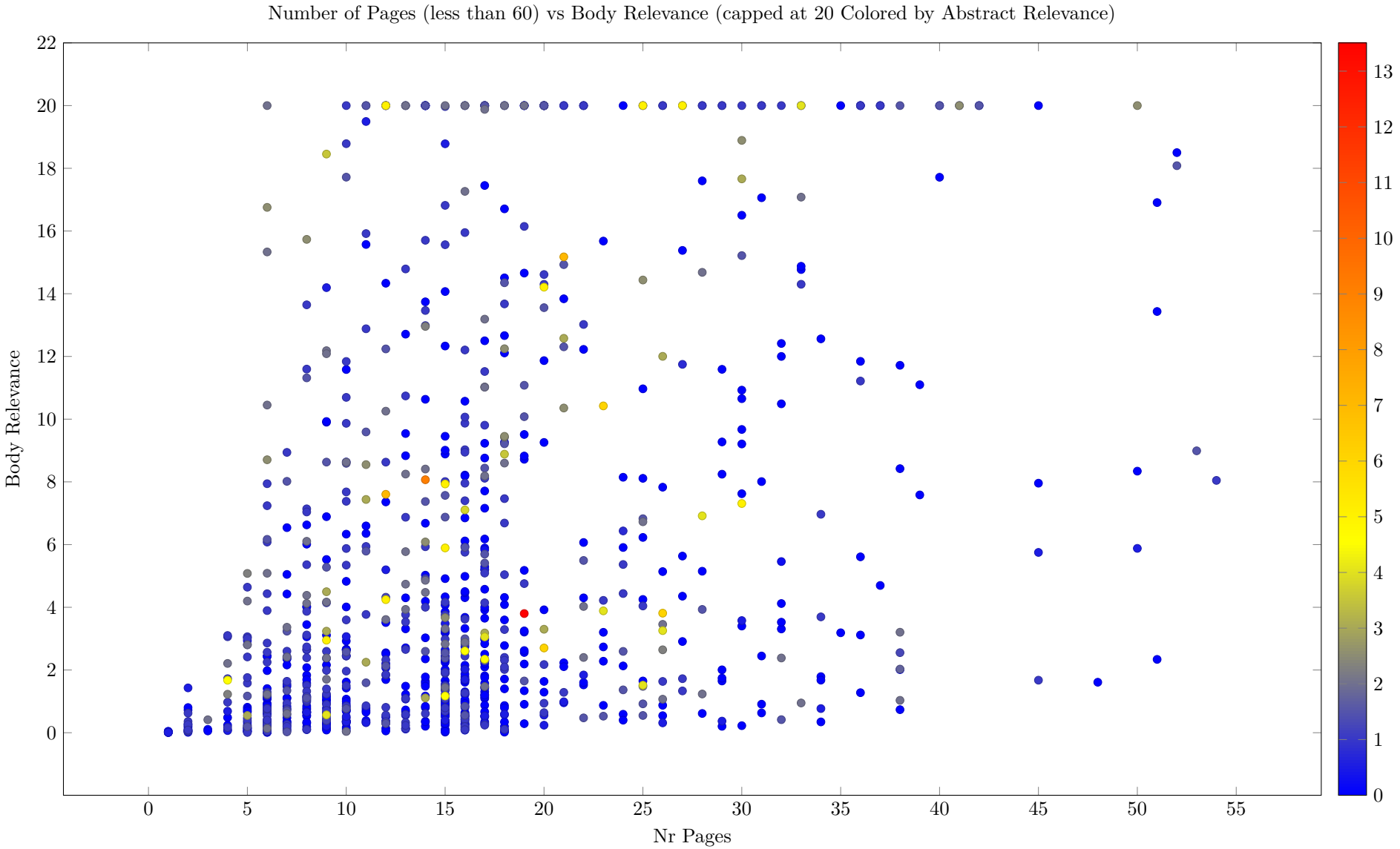
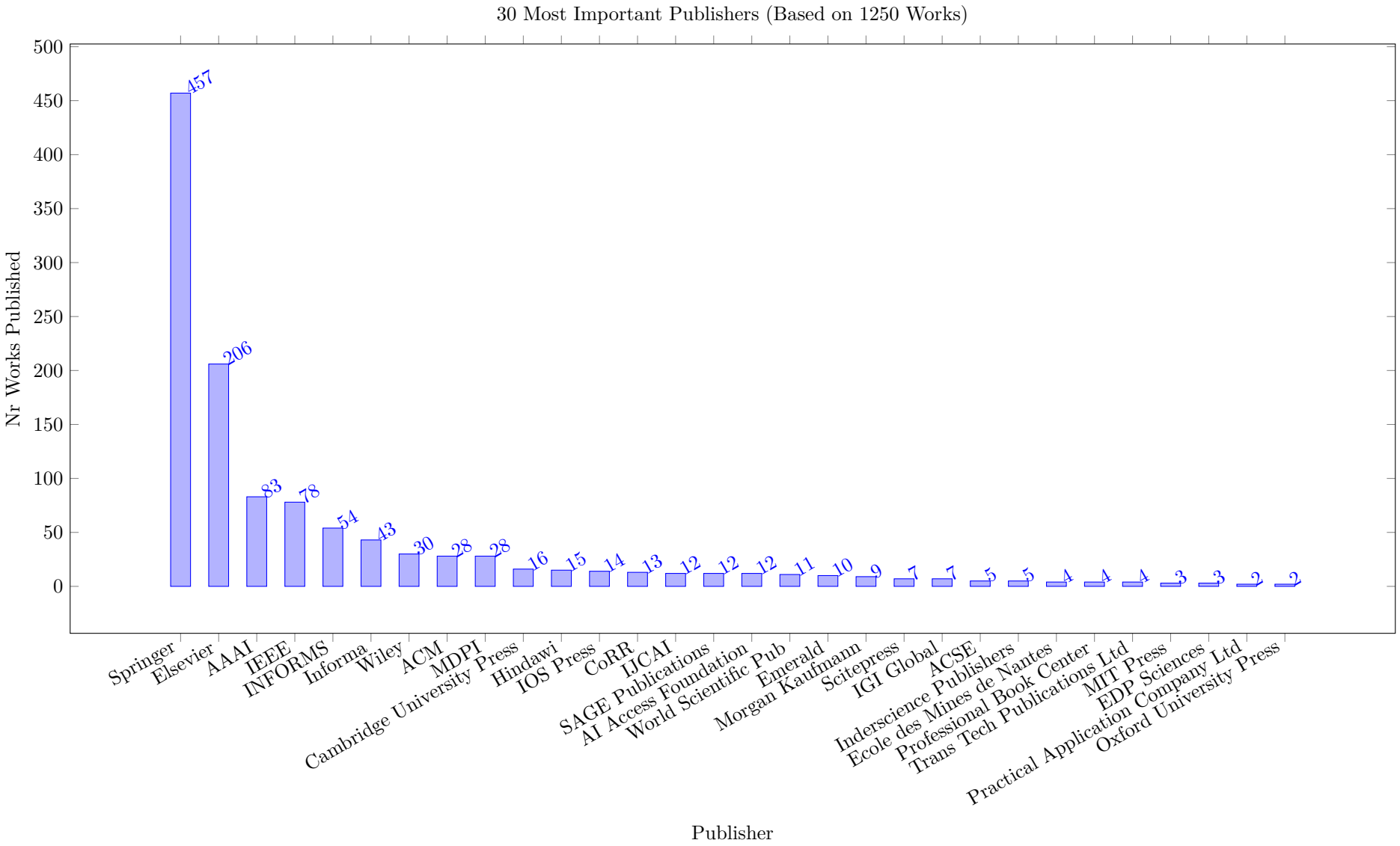
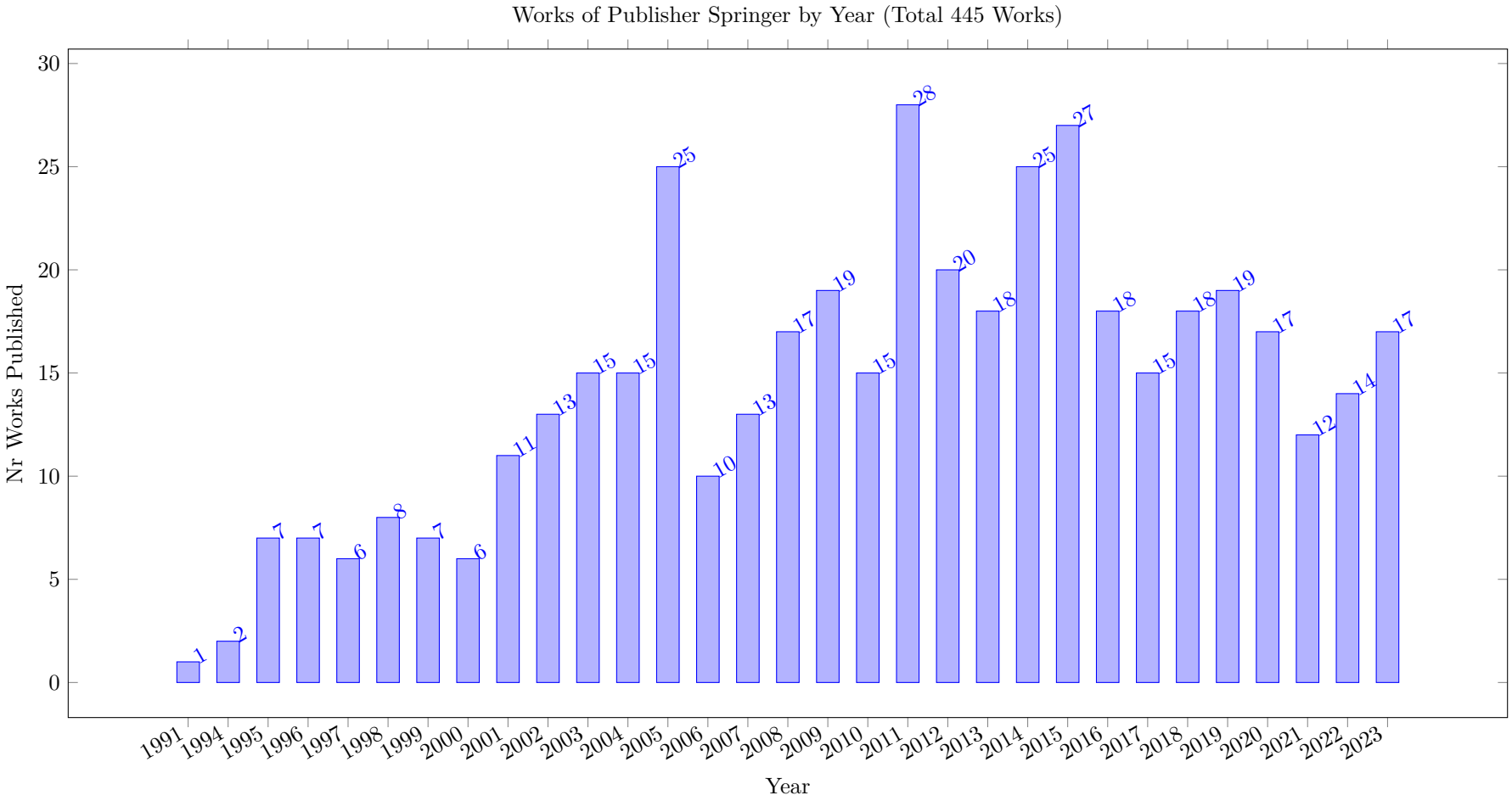
1
0
2
3
Abstract Relevance


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
0


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 445 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
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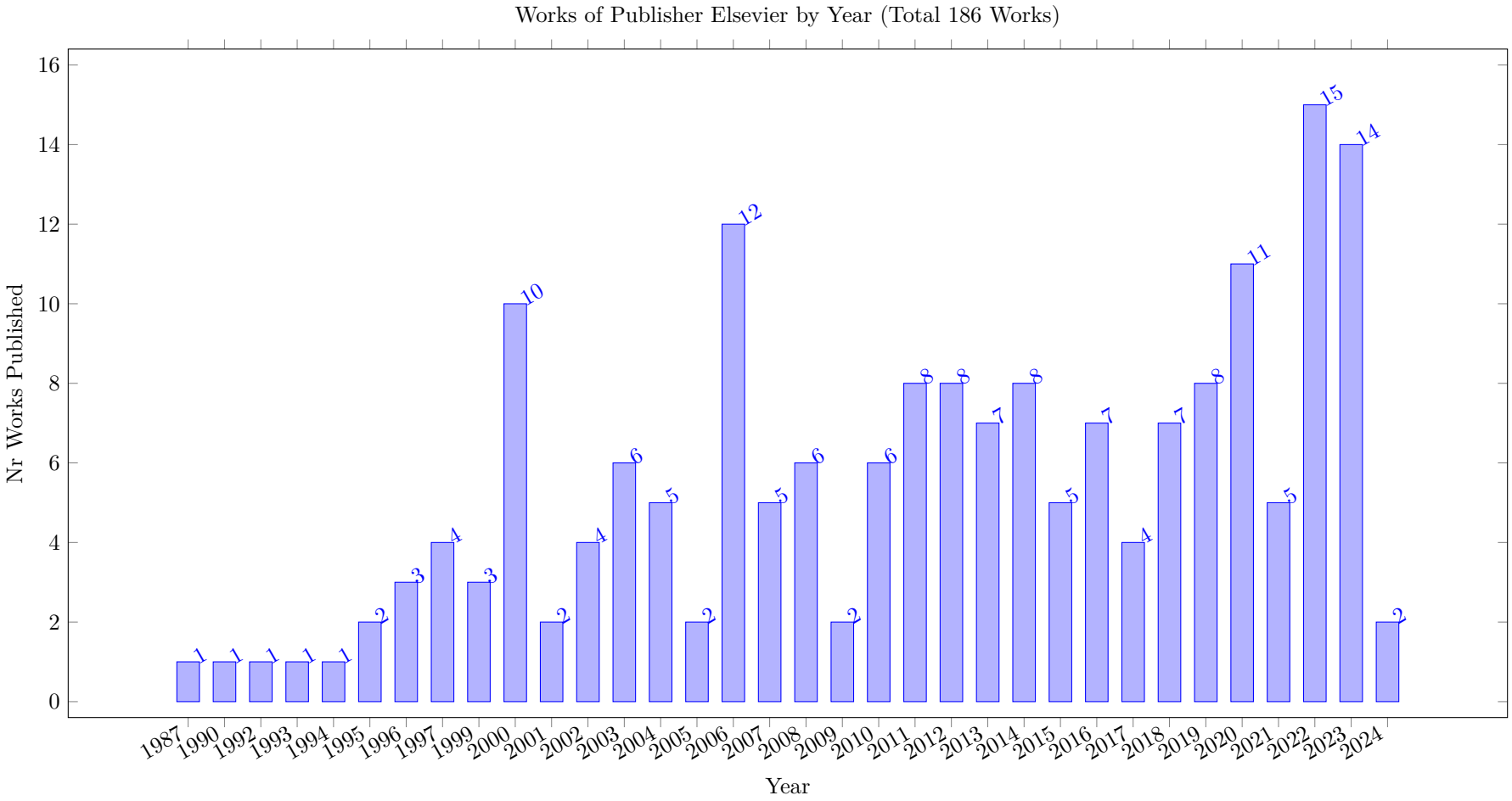
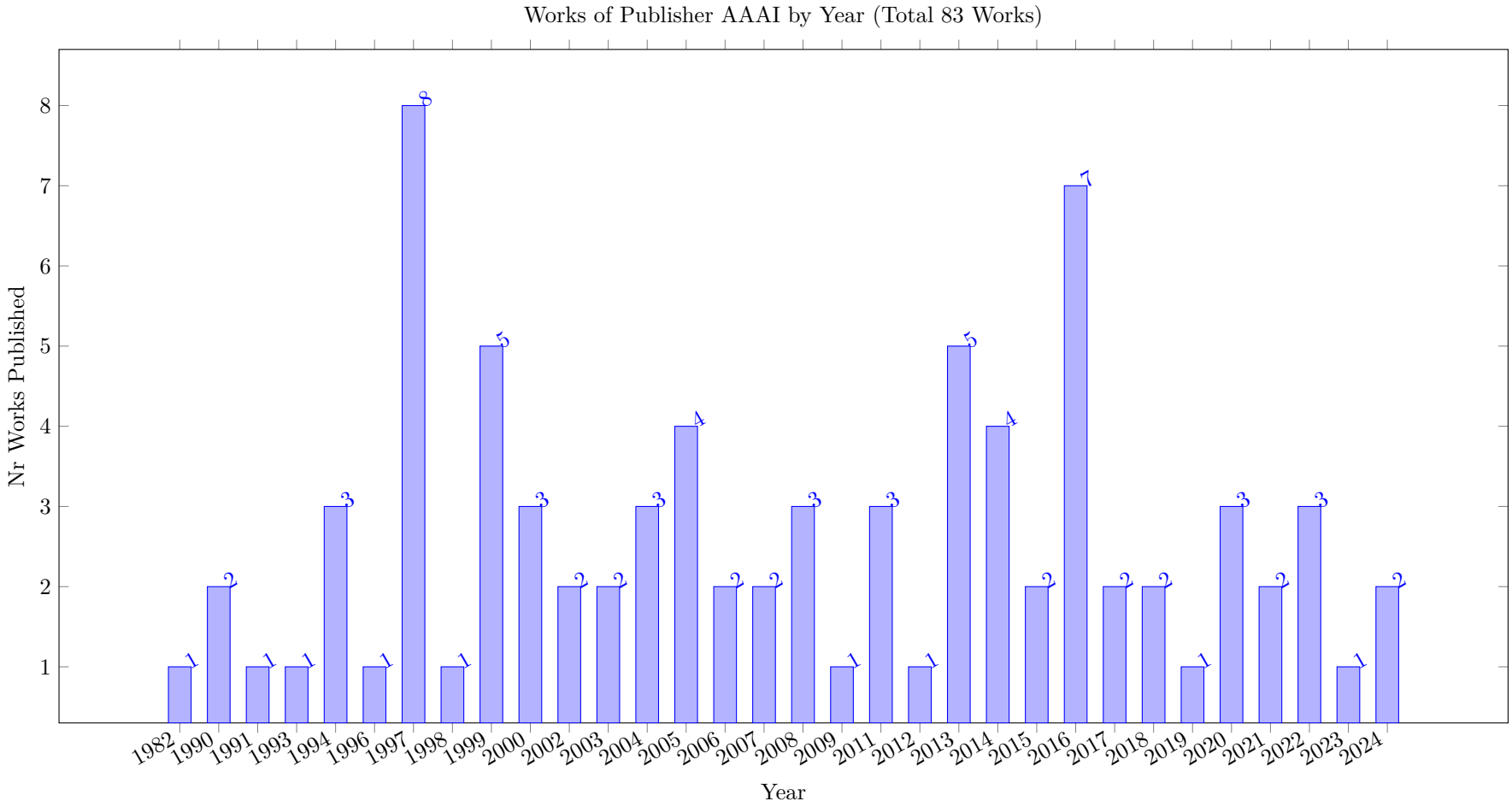
2014 25
2015 27
2016 18
2017 15
2018 18
2019 19
2020 17
2021 12
2022 14
2023 17


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
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2
3
4
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6
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8
1982 1990 1991 1993 1994 1996 1997 1998 1999 2000 2002 2003 2004 2005 2006 2007 2008 2009 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024
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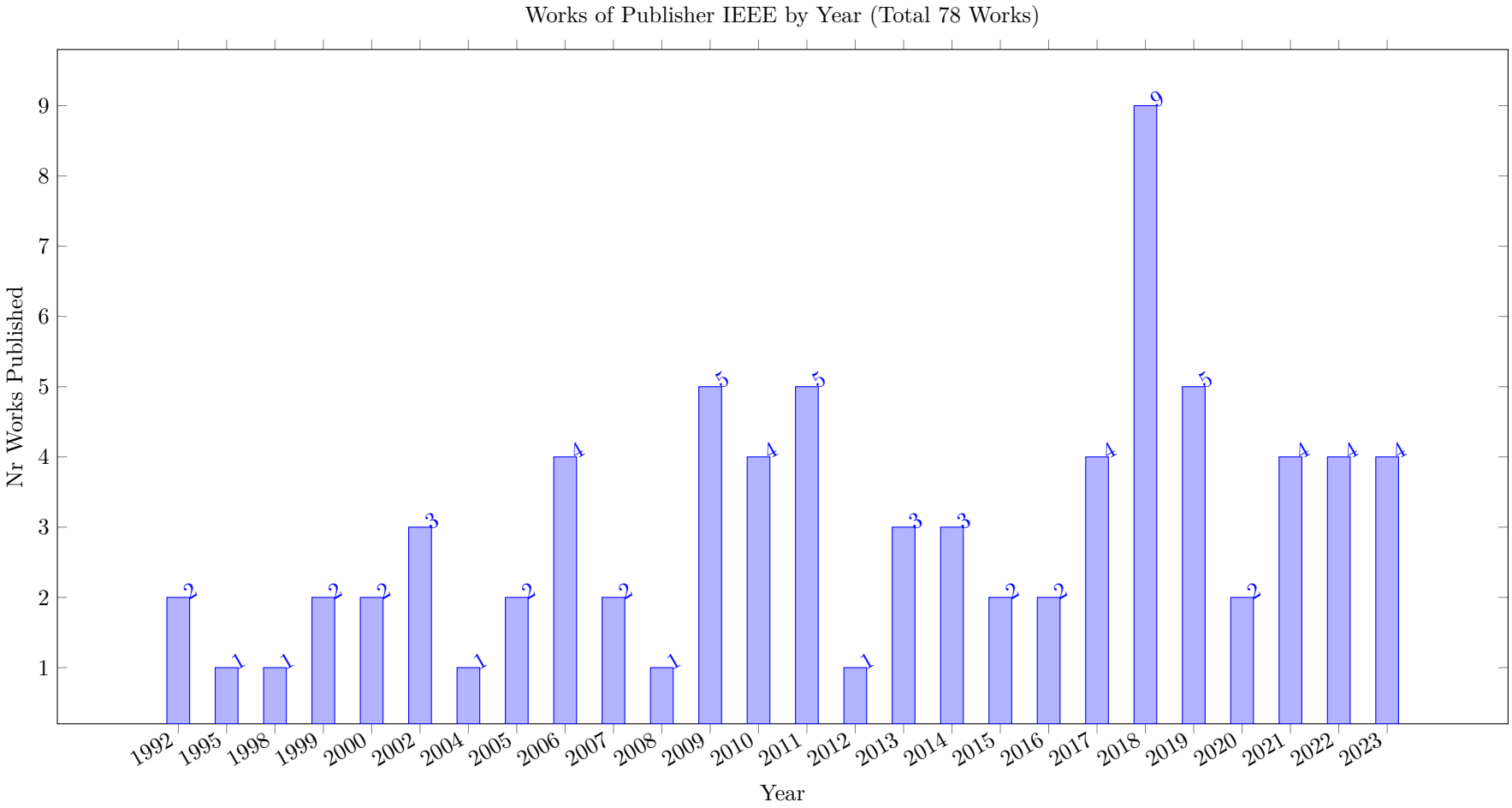
Works of Publisher IEEE by Year (Total 78 Works)
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9
1992
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2000
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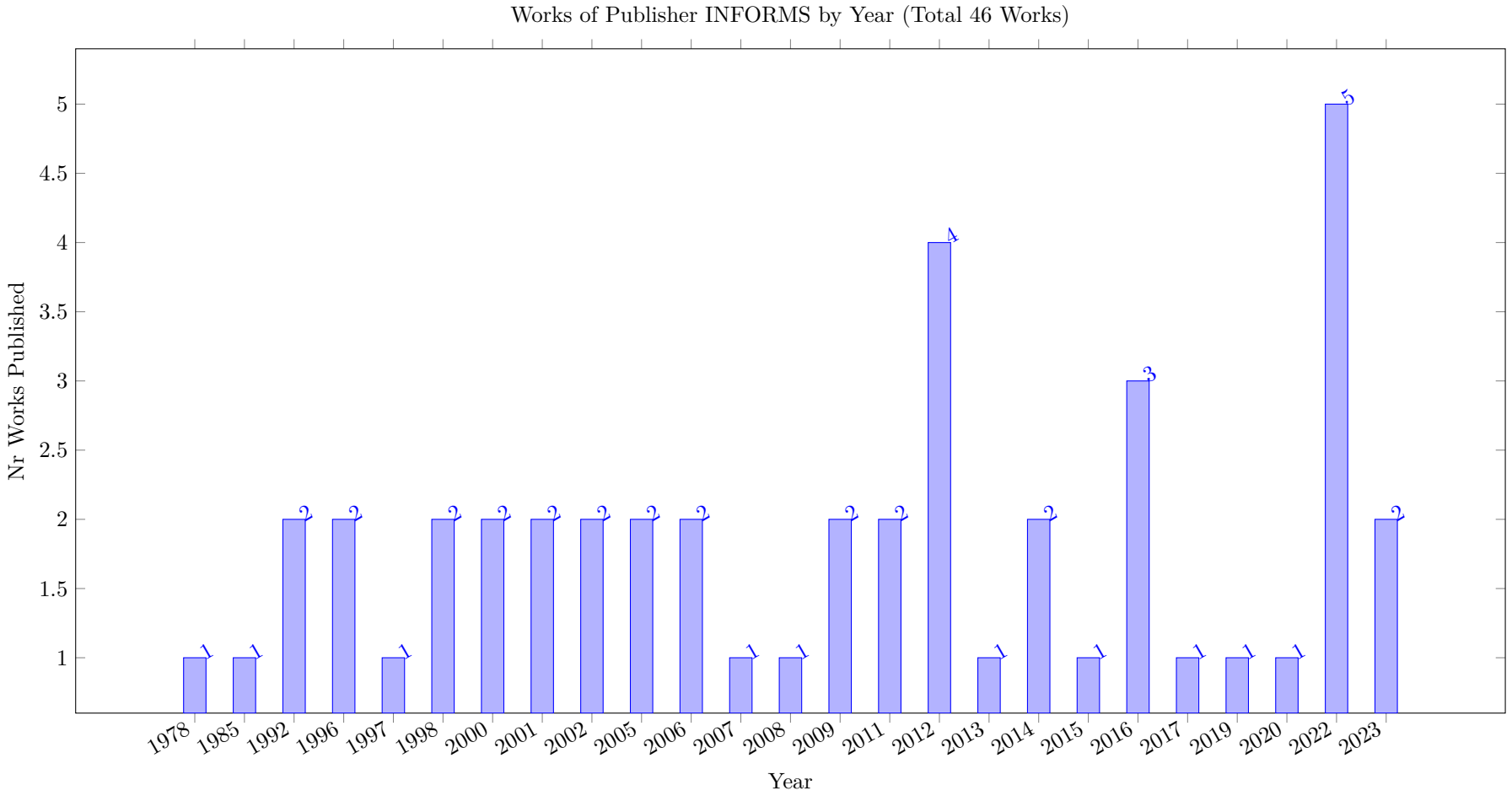
2023


Works of Publisher INFORMS by Year (Total 46 Works)
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4.5
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1996
1997
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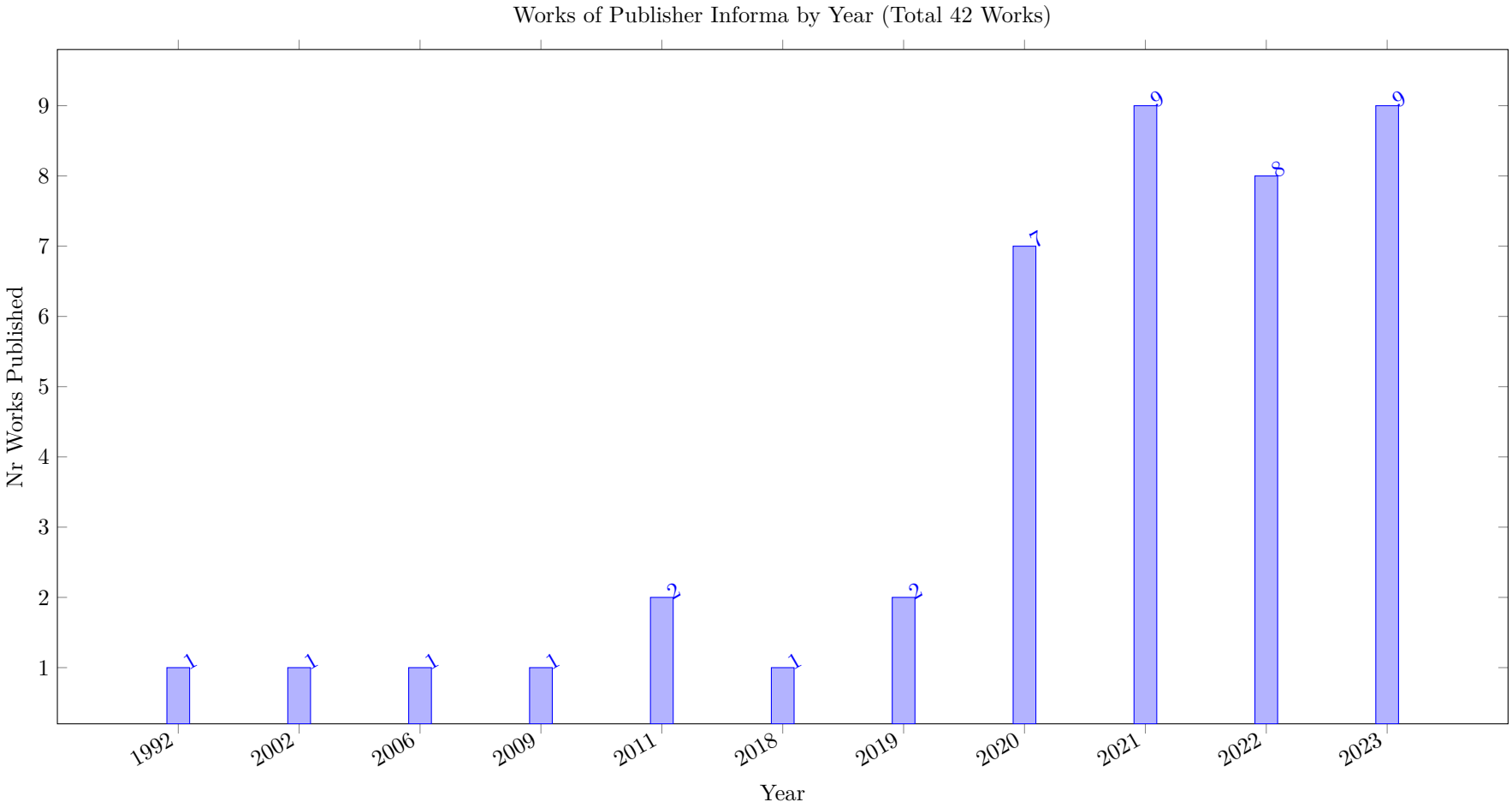
Works of Publisher Informa by Year (Total 42 Works)
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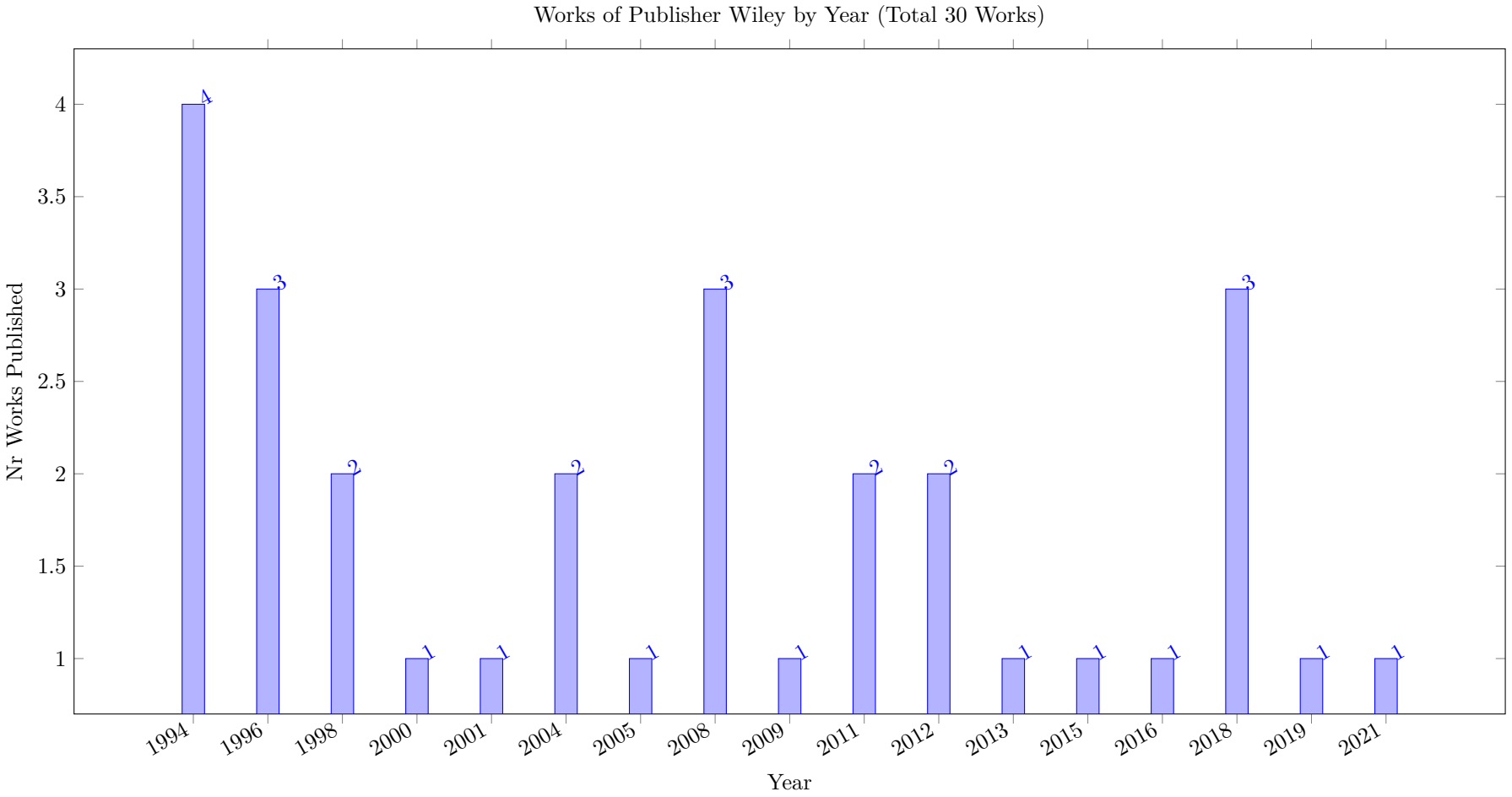
Works of Publisher Wiley by Year (Total 30 Works)
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2.5
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3.5
4
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1996
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2001
2004
2005
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2009
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2013
2015
2016
2018
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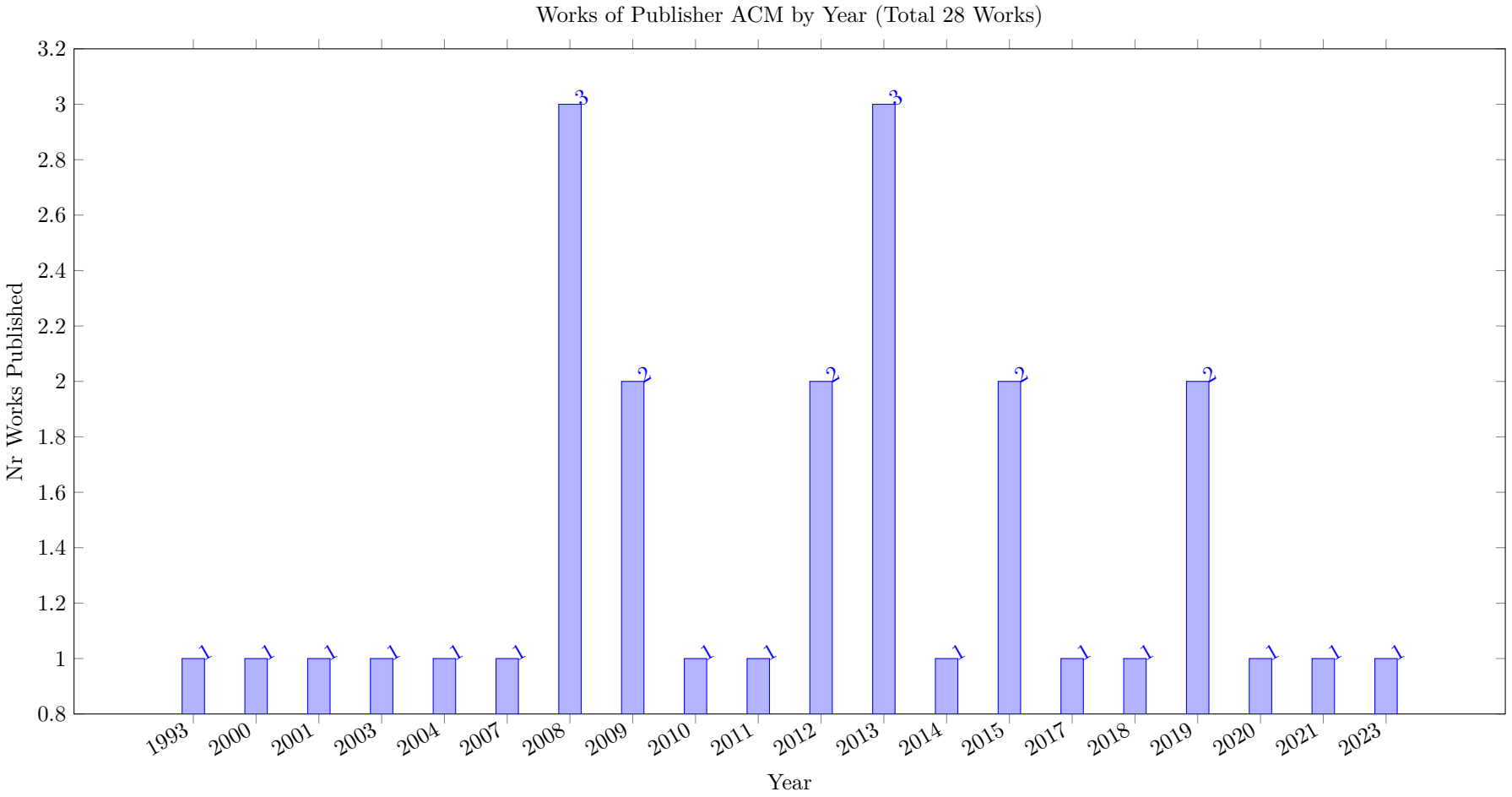
Works of Publisher ACM by Year (Total 28 Works)
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2.6
2.4
2.2
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1.8
1.6
1.4
1.2
1
0.8
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2020
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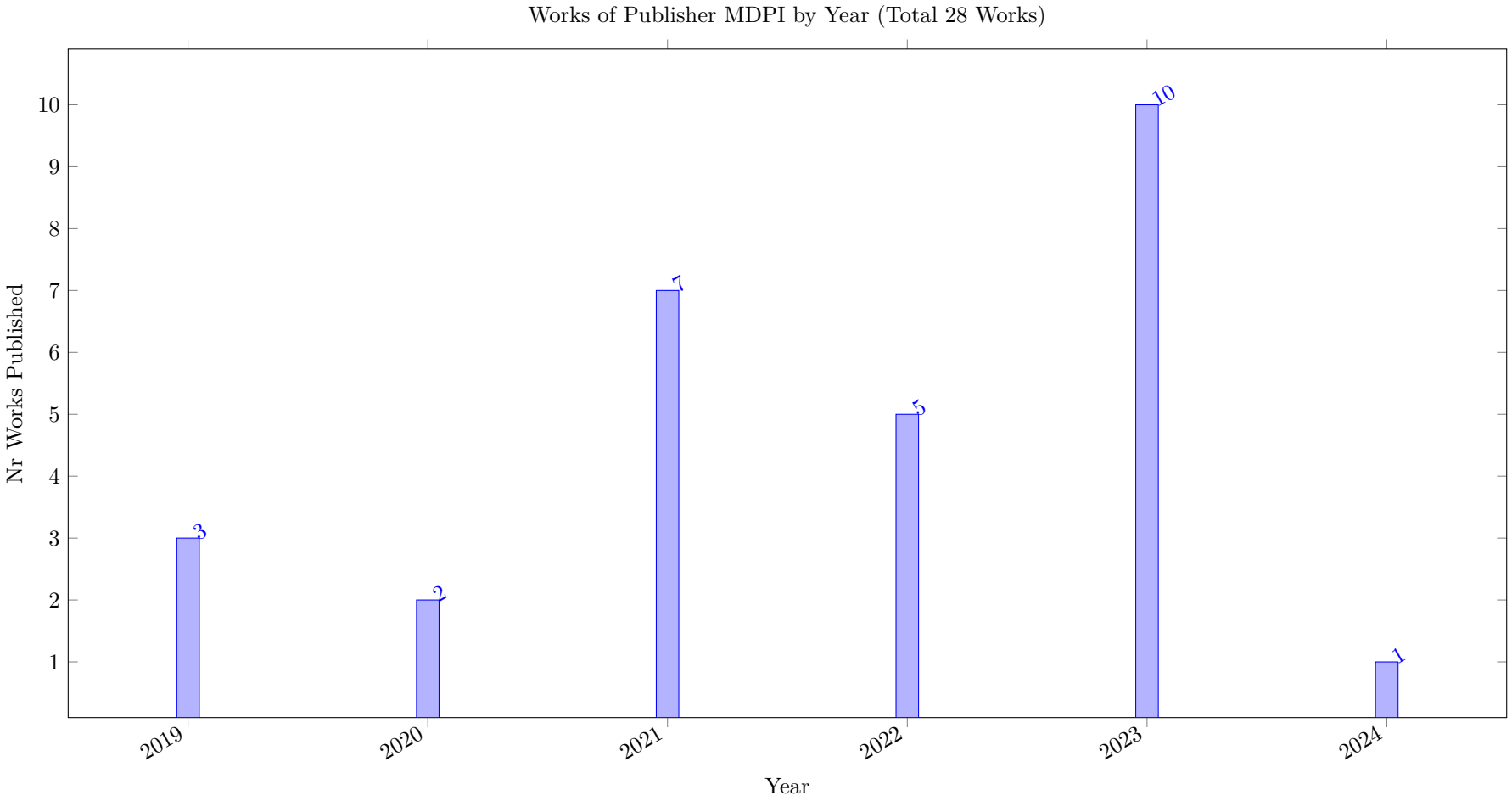
2023


Works of Publisher MDPI by Year (Total 28 Works)
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2023
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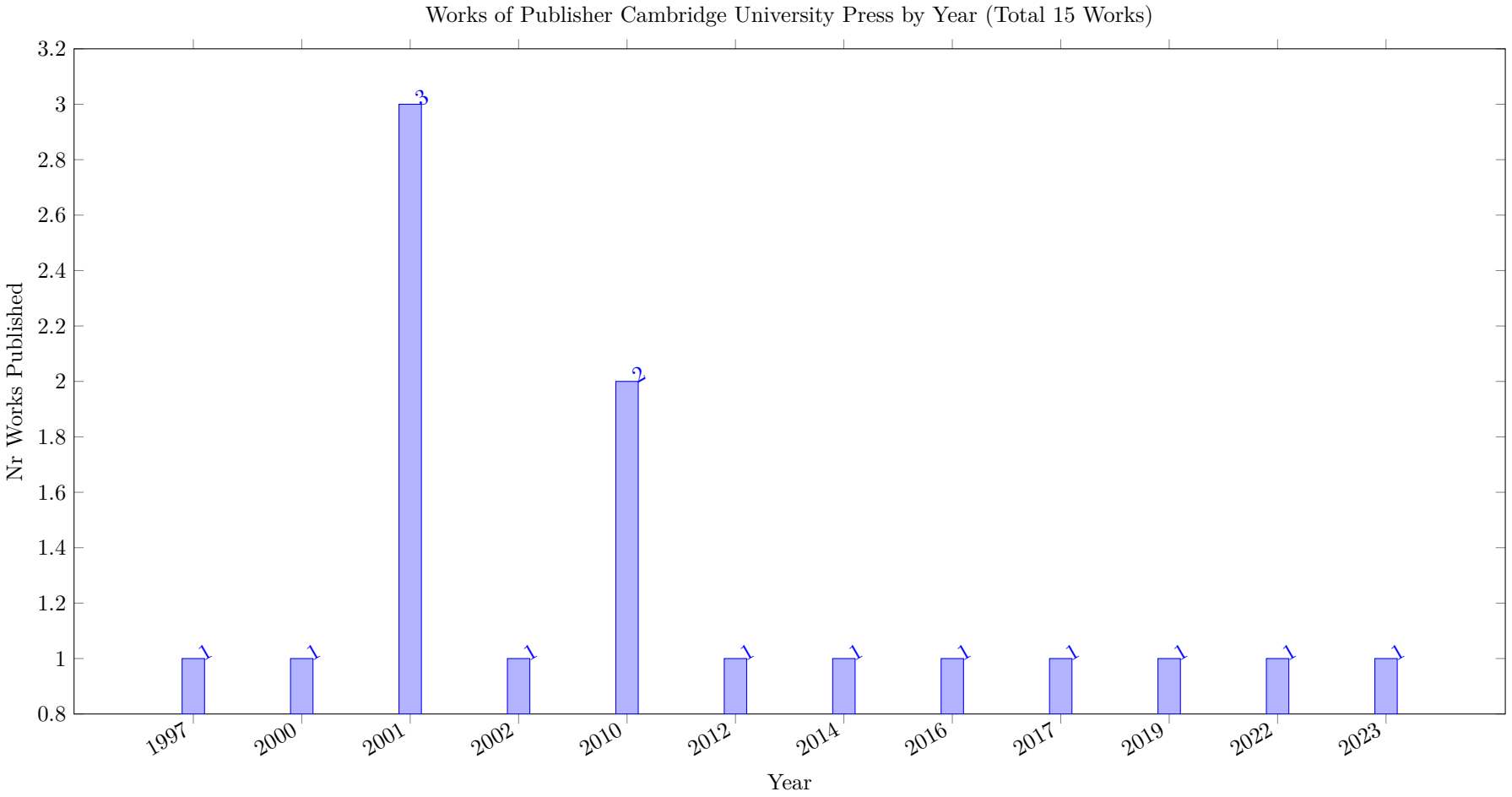
10
1


Works of Publisher Cambridge University Press by Year (Total 15 Works)
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Year
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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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2001
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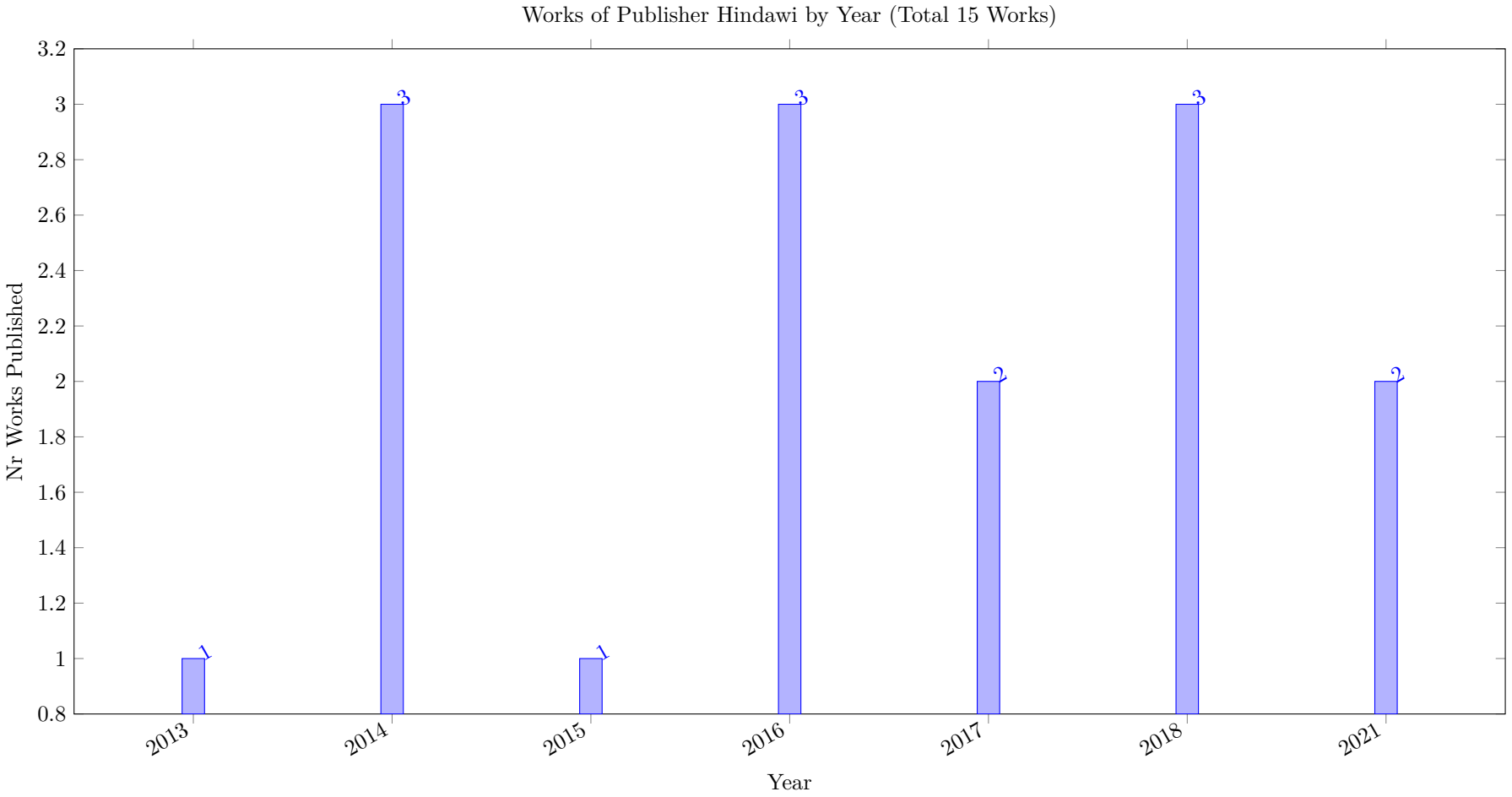
Works of Publisher Hindawi by Year (Total 15 Works)
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Year
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2.6
2.4
2.2
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1.8
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3
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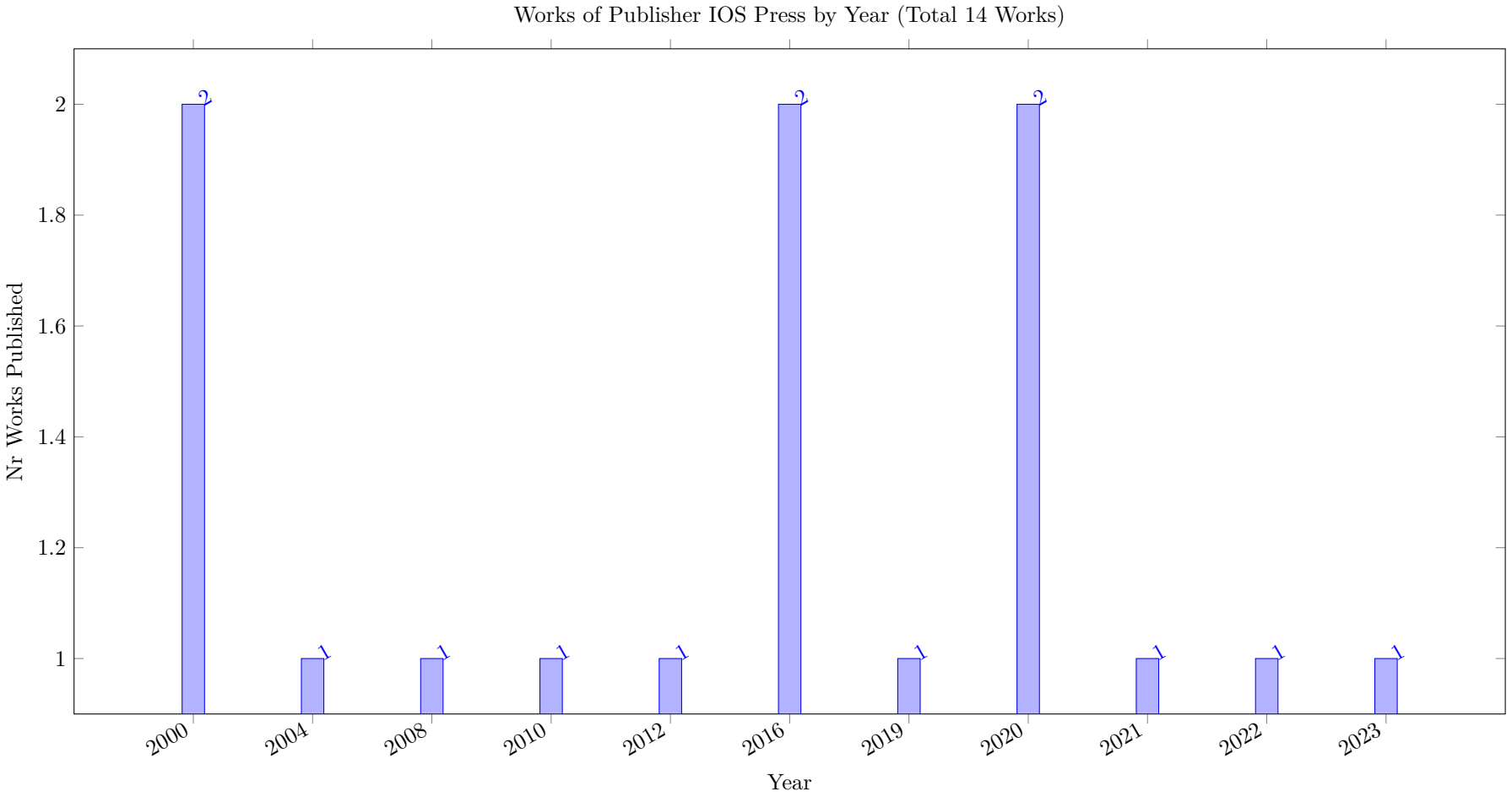
Works of Publisher IOS Press by Year (Total 14 Works)
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2016
2019
2020
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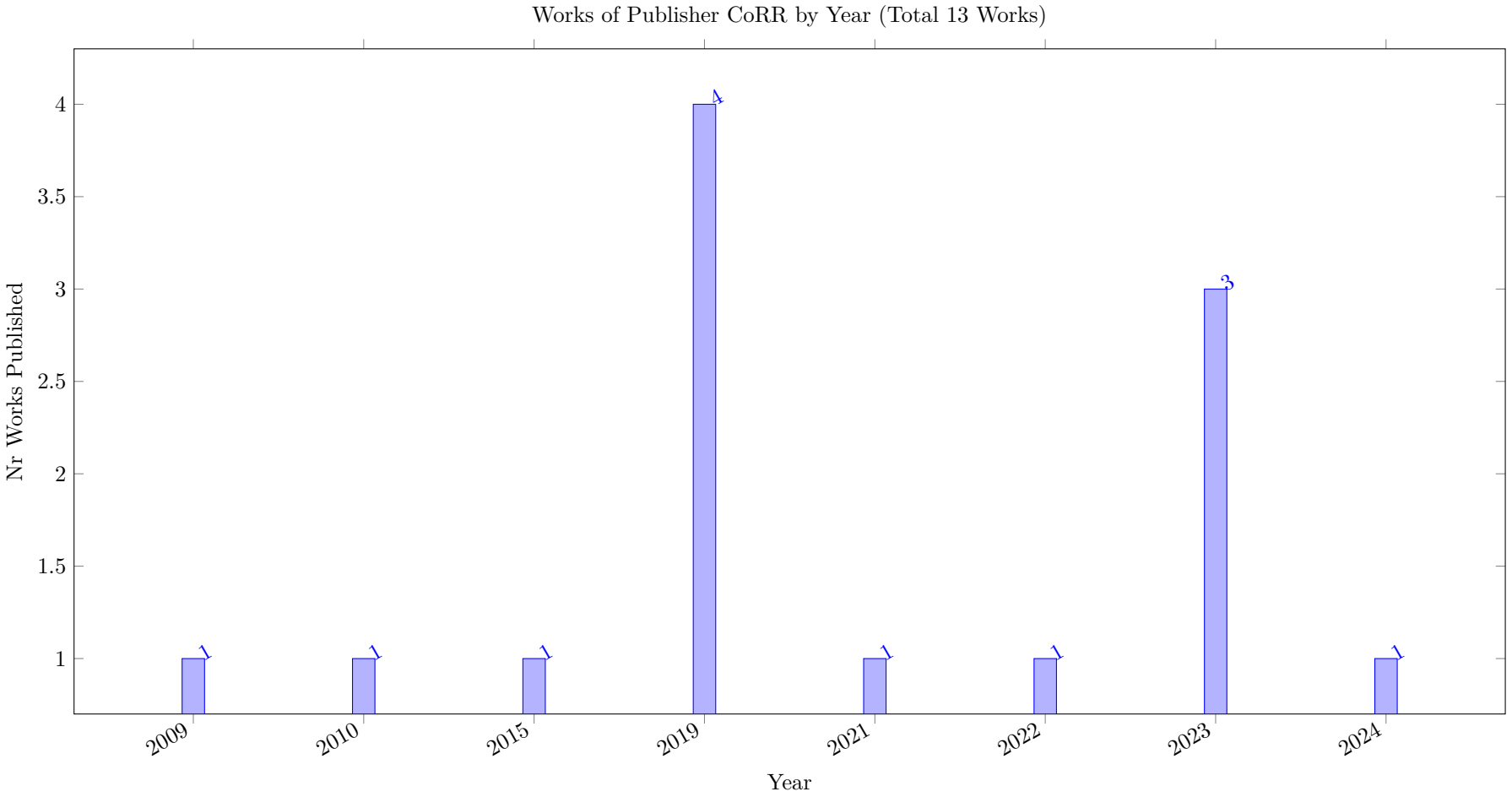
2022
2023
Year


Works of Publisher CoRR by Year (Total 13 Works)
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2023
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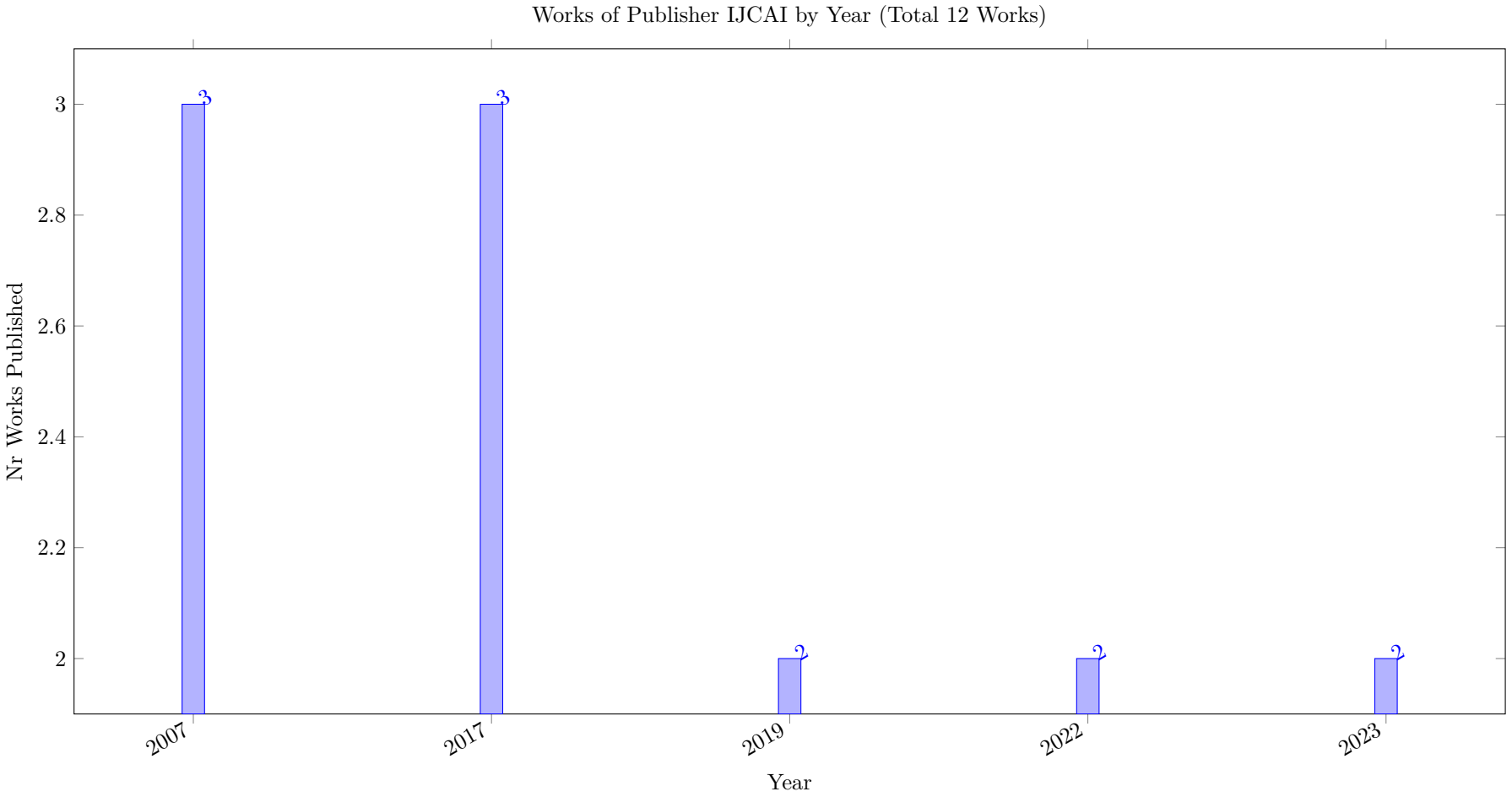
Works of Publisher IJCAI by Year (Total 12 Works)
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3
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2
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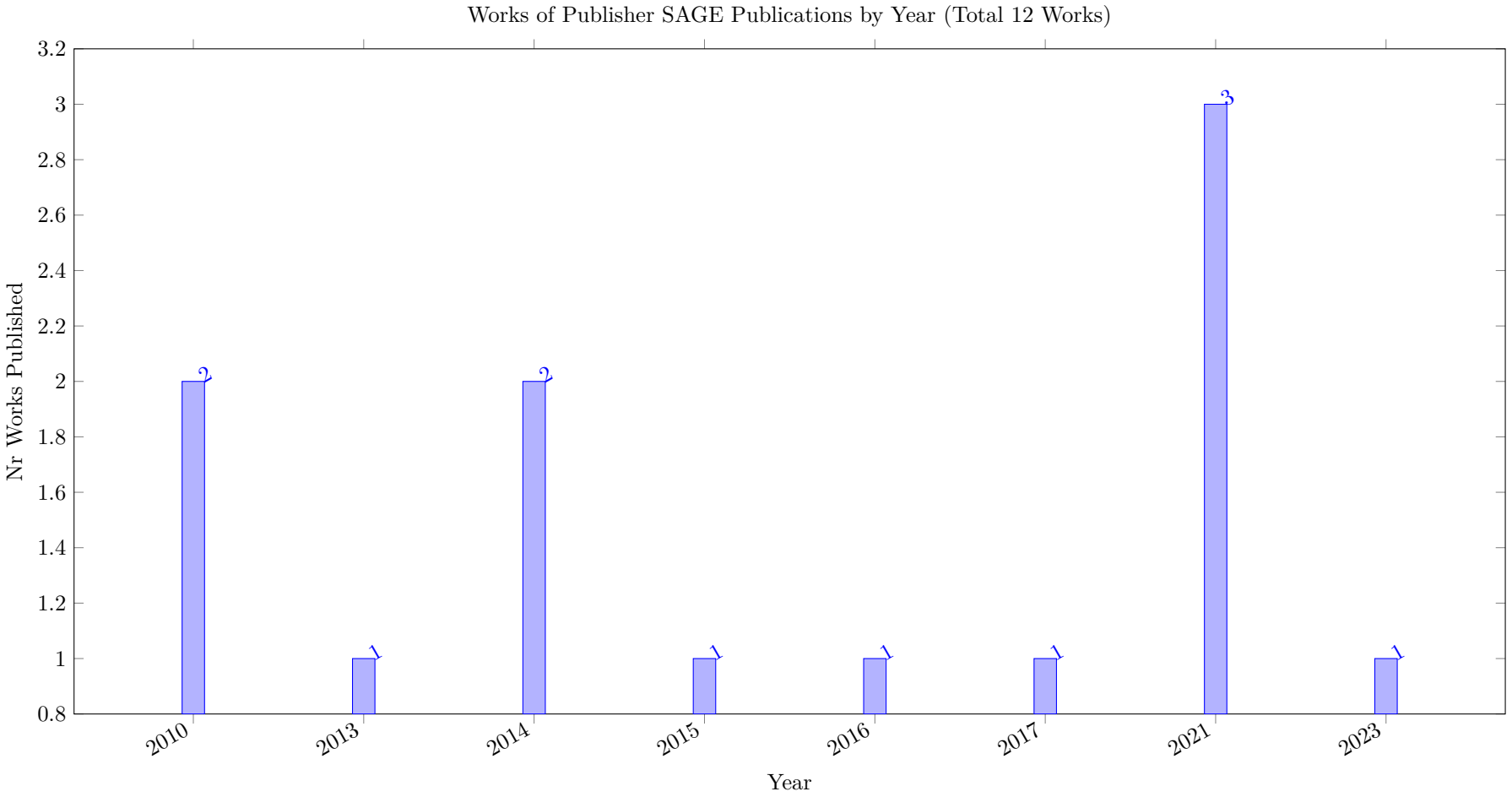
2017
2019
2022
2023
Year


Works of Publisher SAGE Publications by Year (Total 12 Works)
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2.8
2.6
2.4
2.2
2
1.8
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1.4
1.2
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2014
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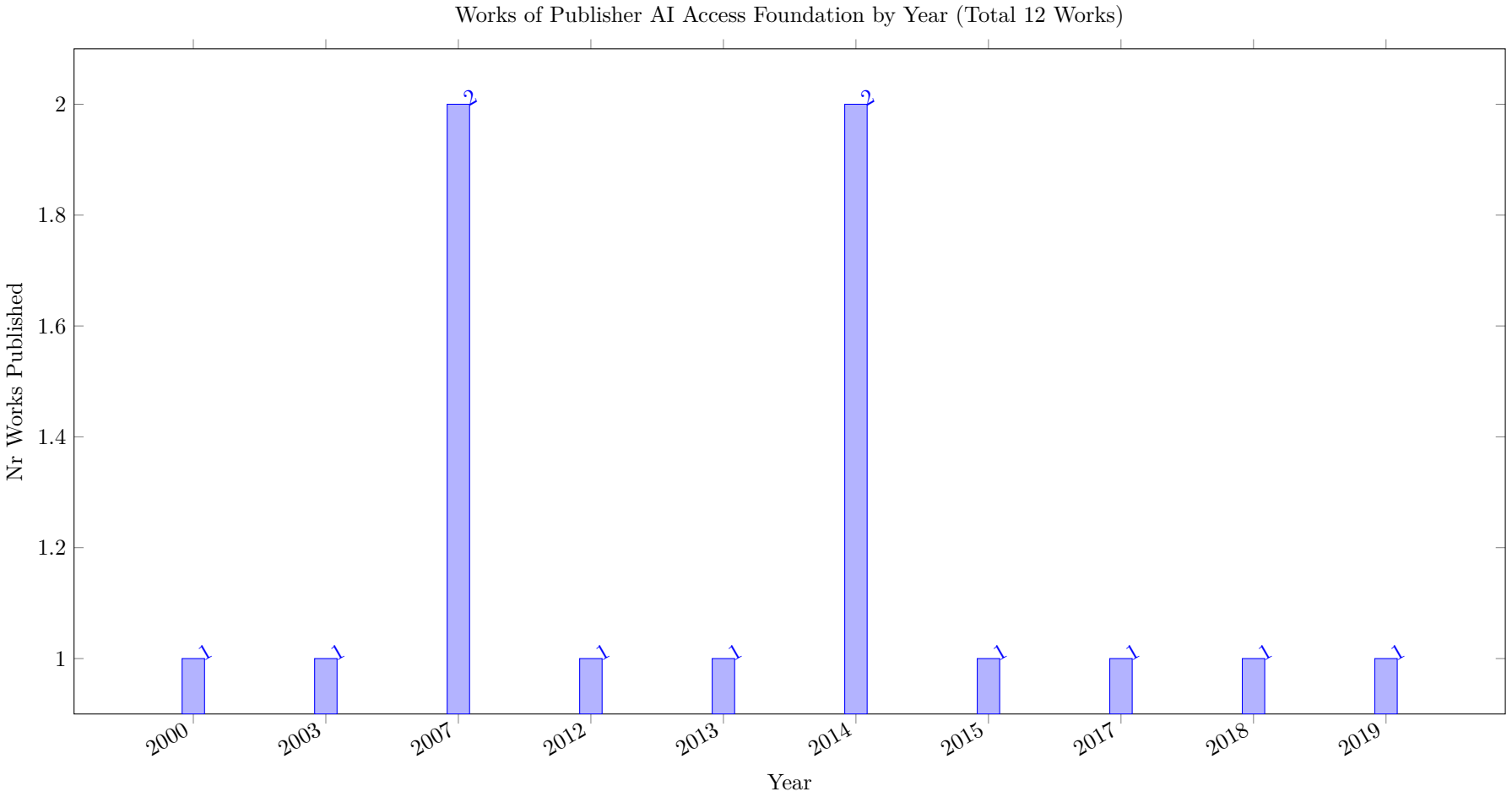
2017
2021
2023
Year


Works of Publisher AI Access Foundation by Year (Total 12 Works)
Nr Works Published
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2000
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2012
2013
2014
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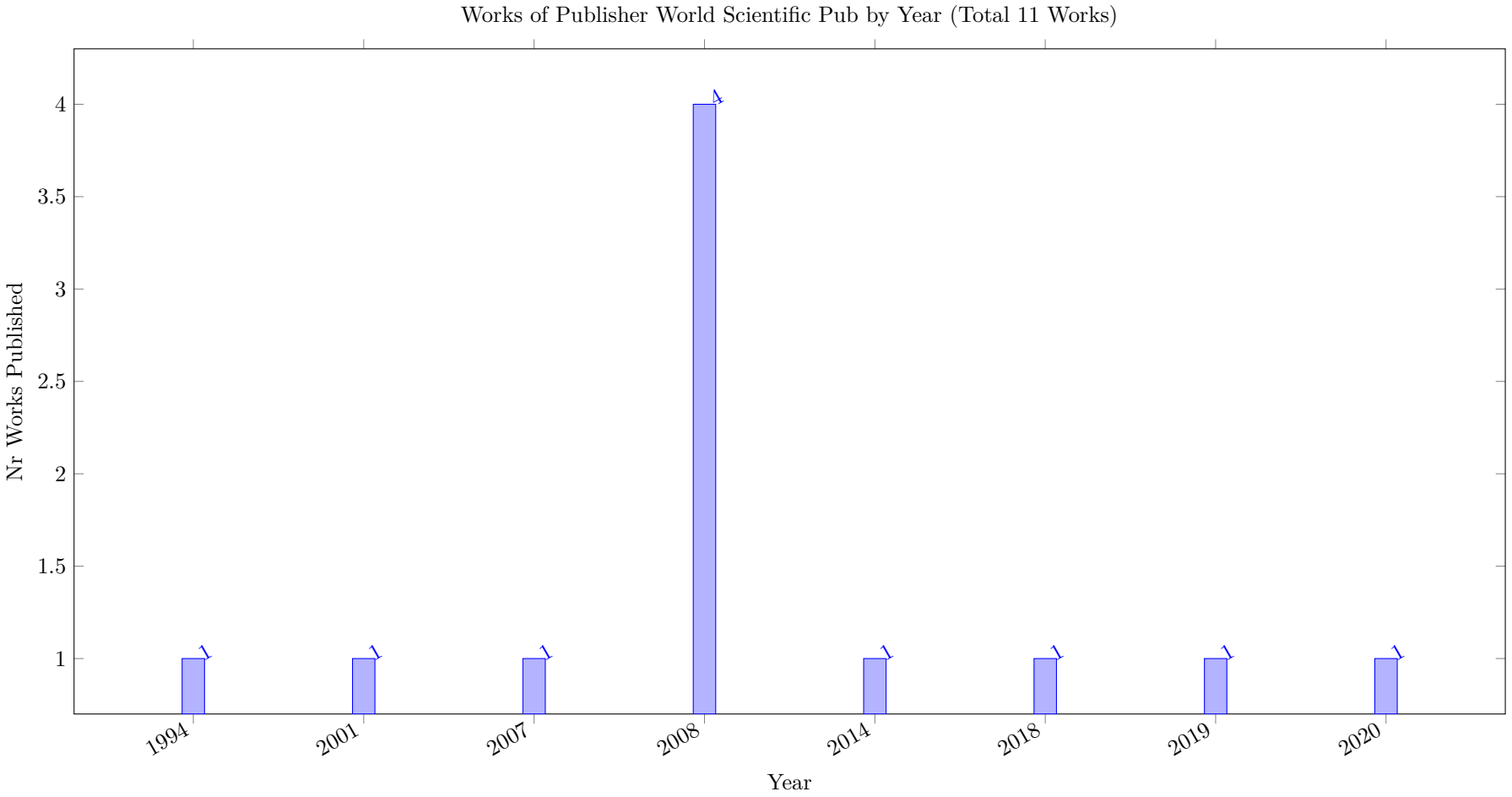
2018
2019
Year


Works of Publisher World Scientific Pub by Year (Total 11 Works)
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1994
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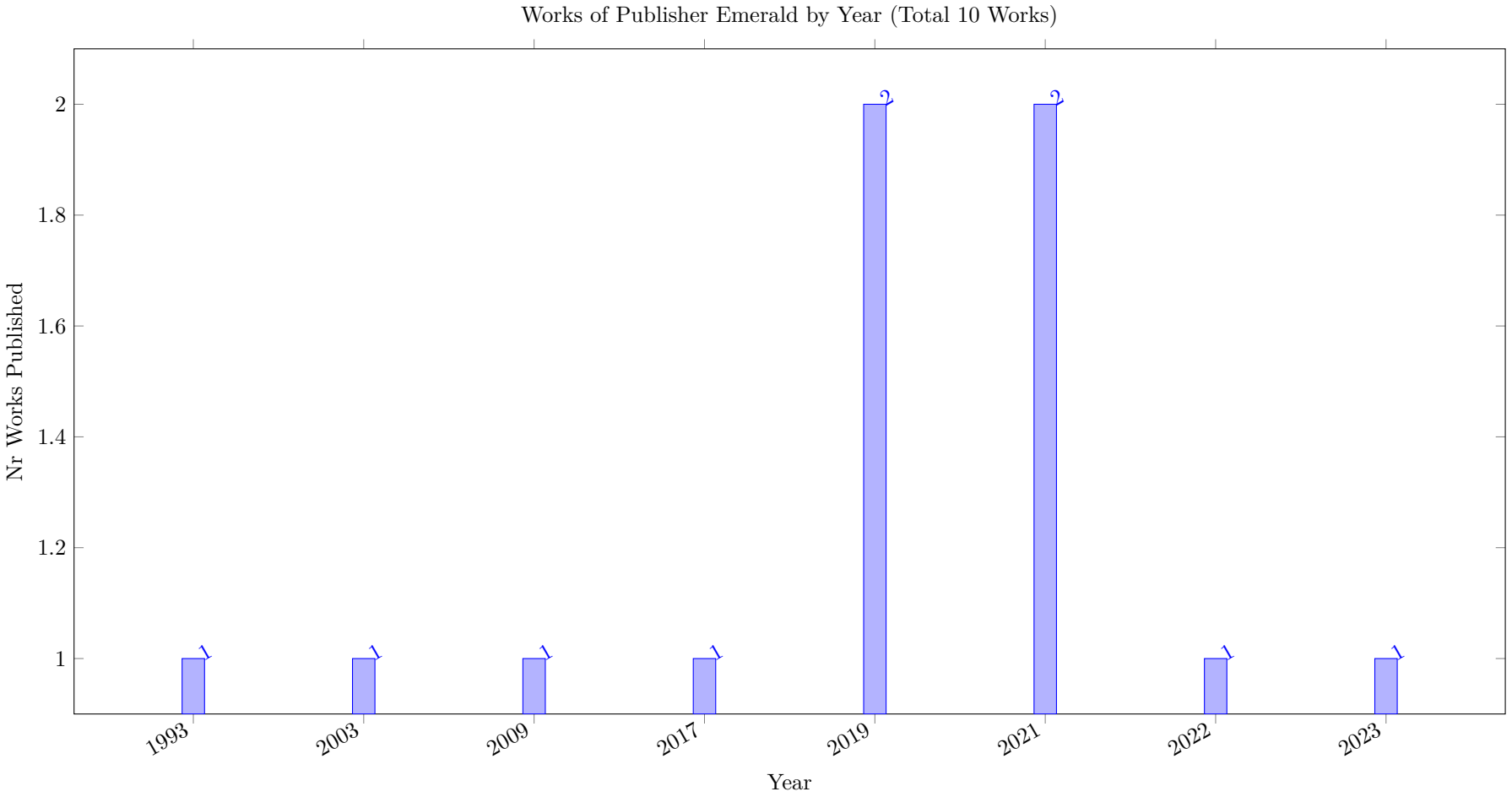
2008
2014
2018
2019
2020


Works of Publisher Emerald by Year (Total 10 Works)
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1.6
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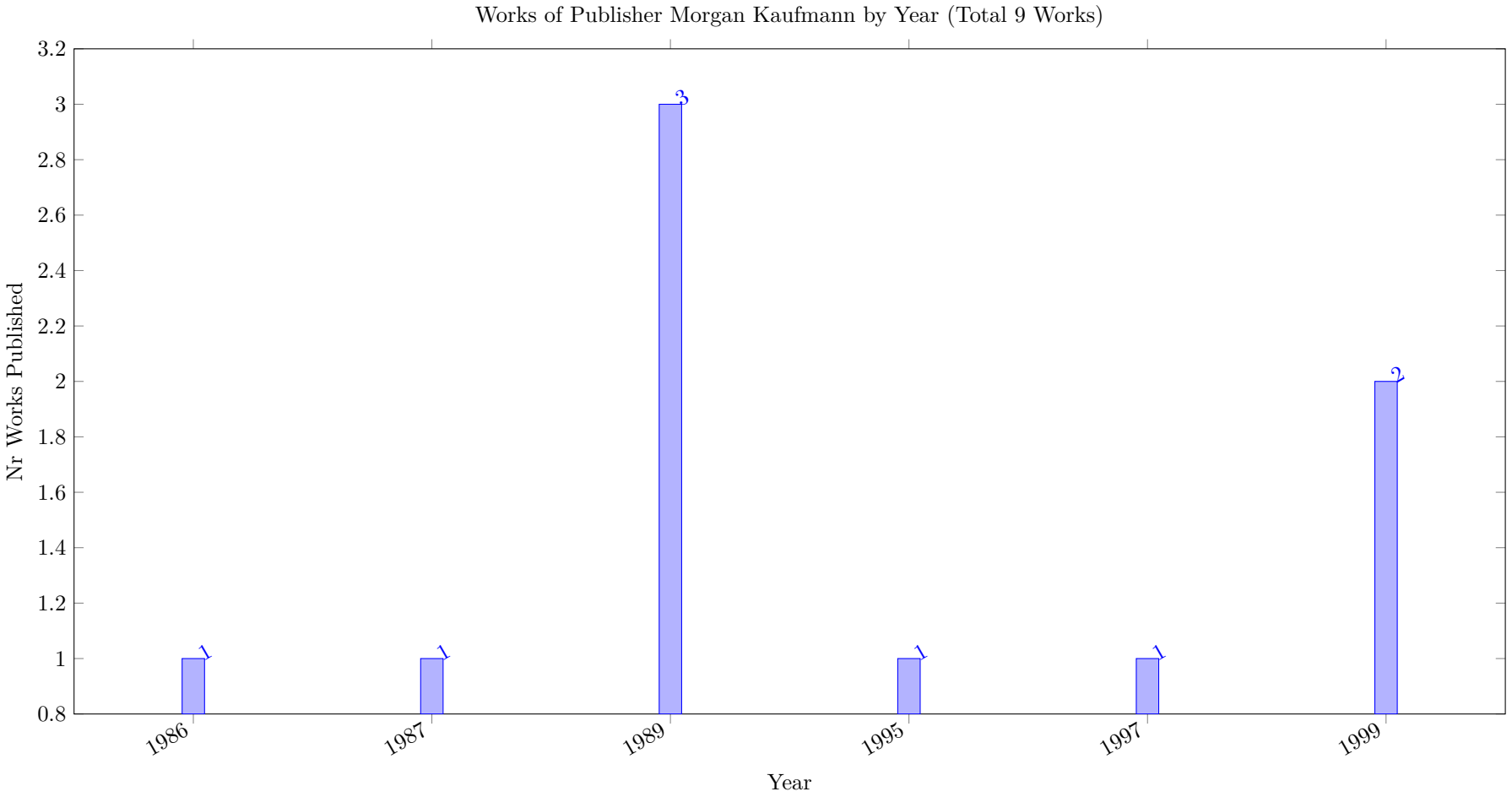
2003
2009
2017
2019
2021
2022
2023


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
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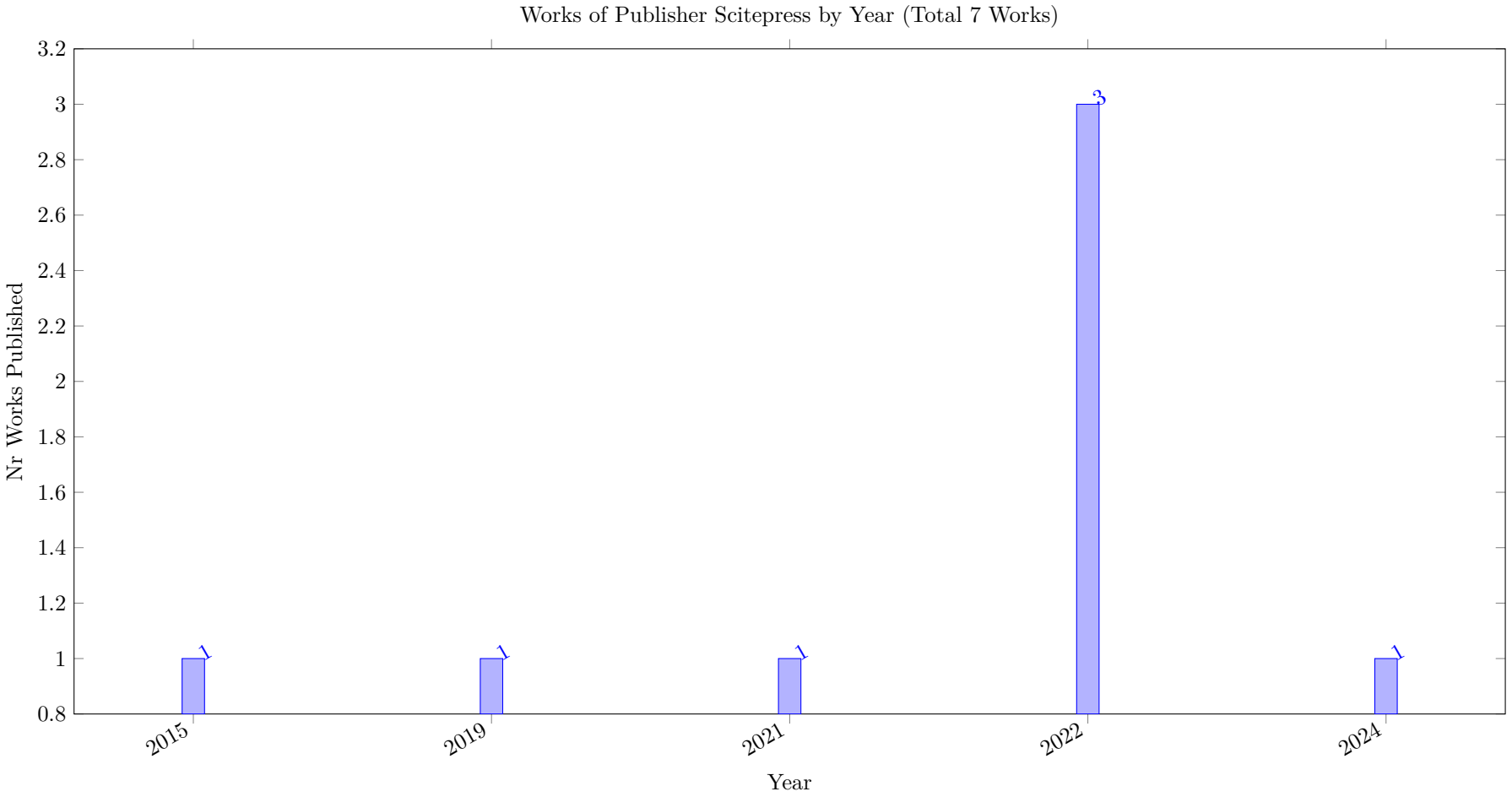
1995
1997
1999
Year


Works of Publisher Scitepress by Year (Total 7 Works)
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3
2.8
2.6
2.4
2.2
2
1.8
1.6
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1.2
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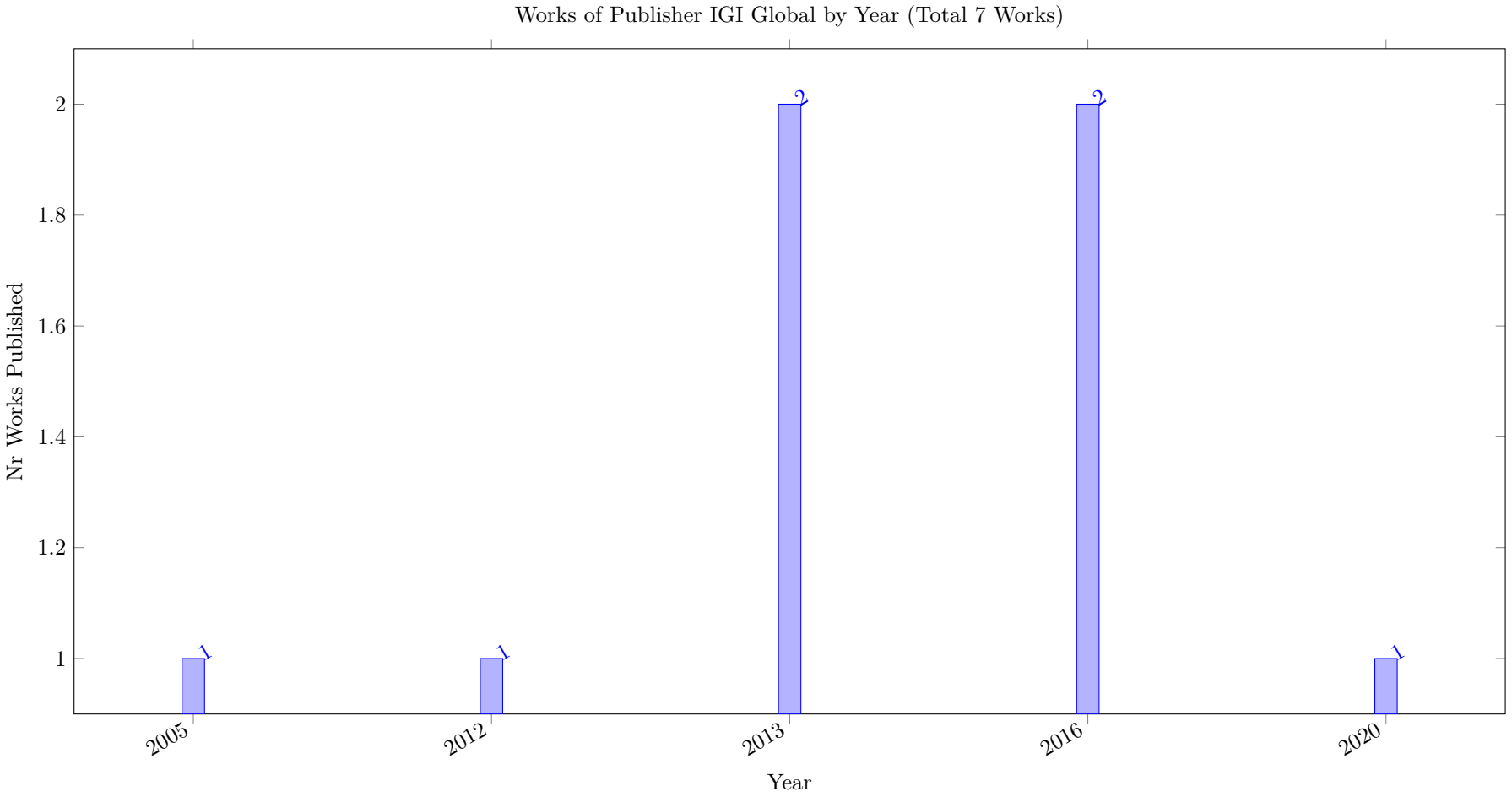
3
1
2015
2019
2021
2022
2024
Year


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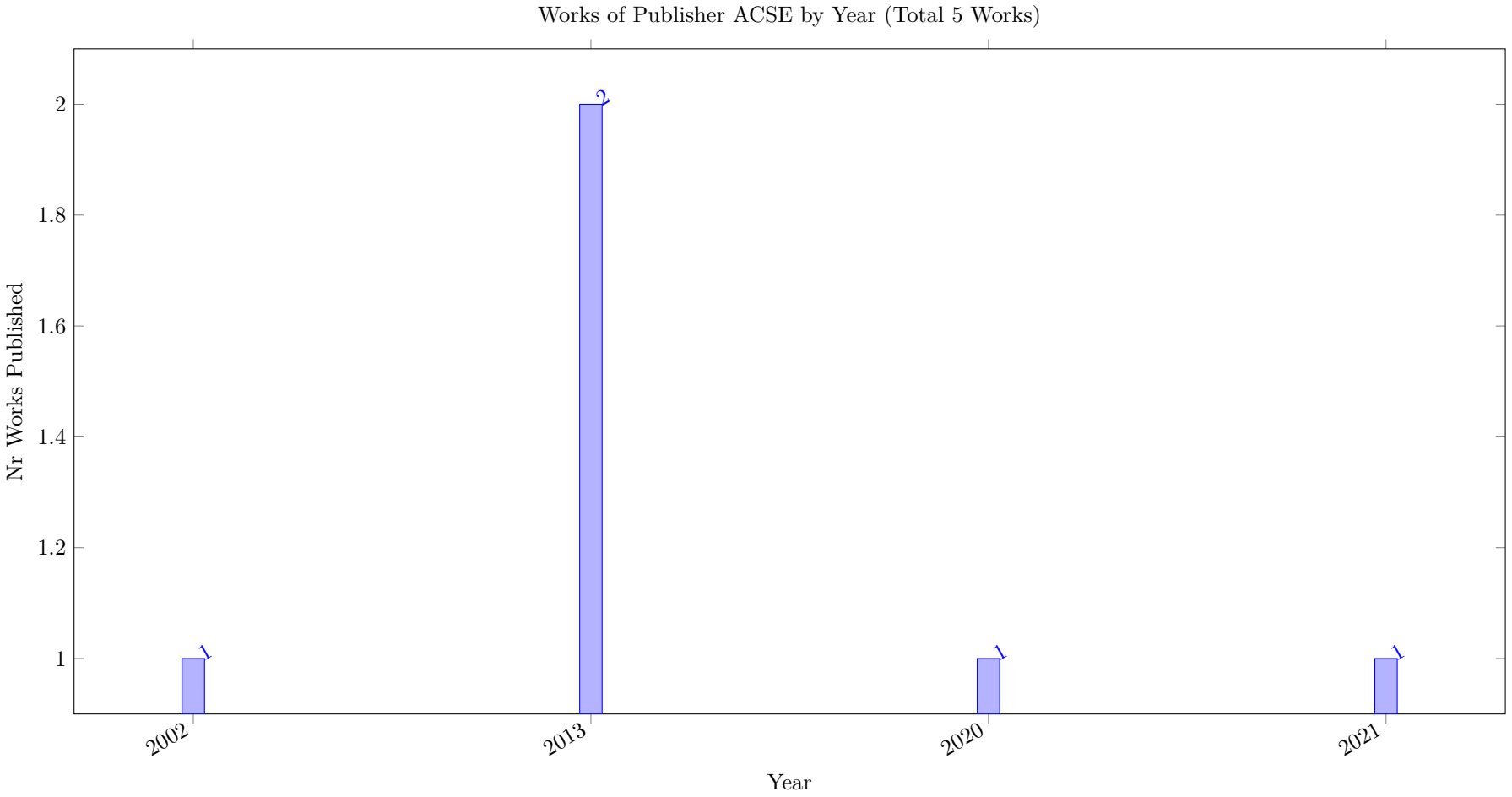
2
2
1
2005
2012
2013
2016
2020
Year


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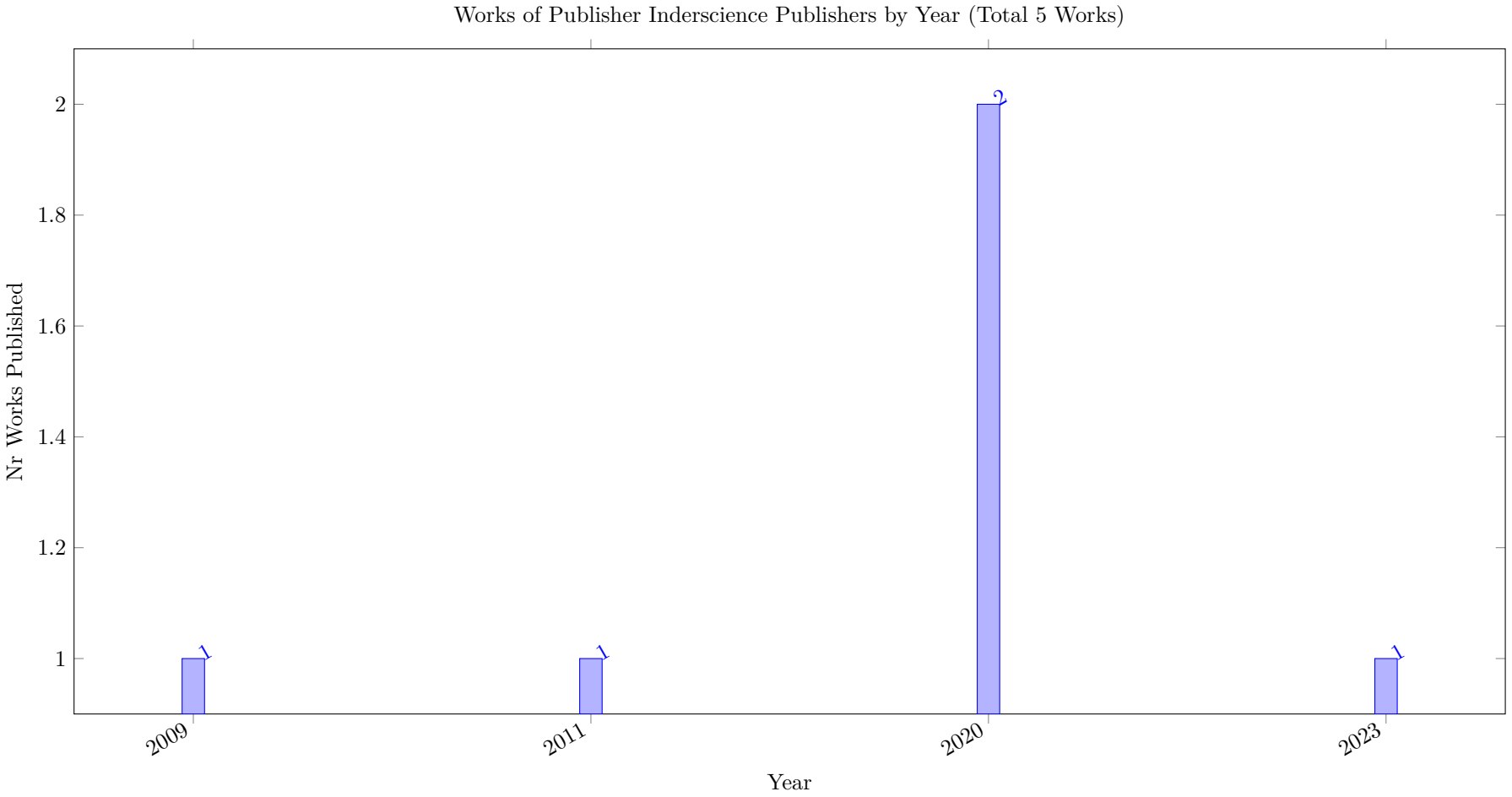
2013
2020
2021
Year


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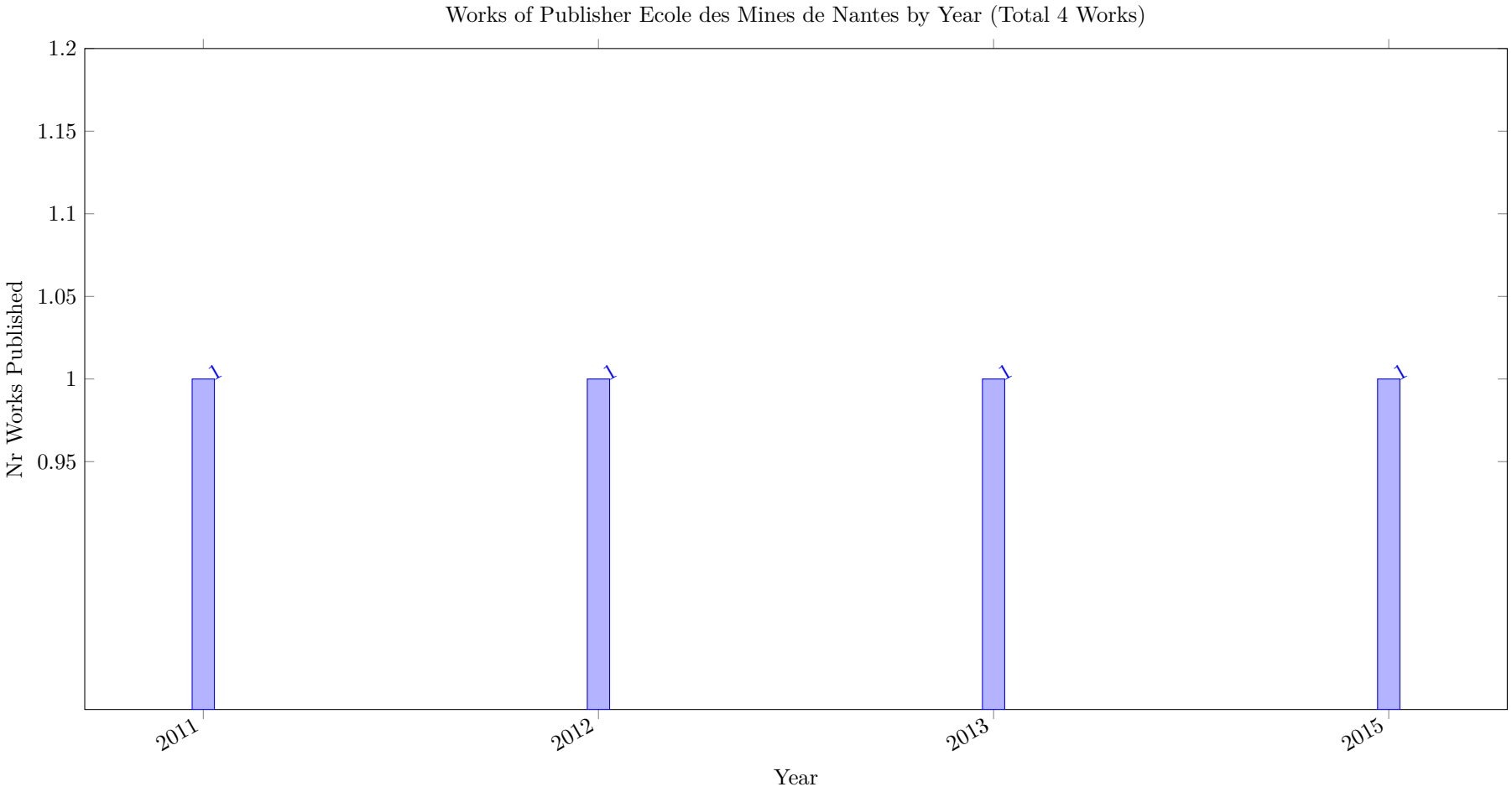
2023
Year


Works of Publisher Ecole des Mines de Nantes by Year (Total 4 Works)
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2013
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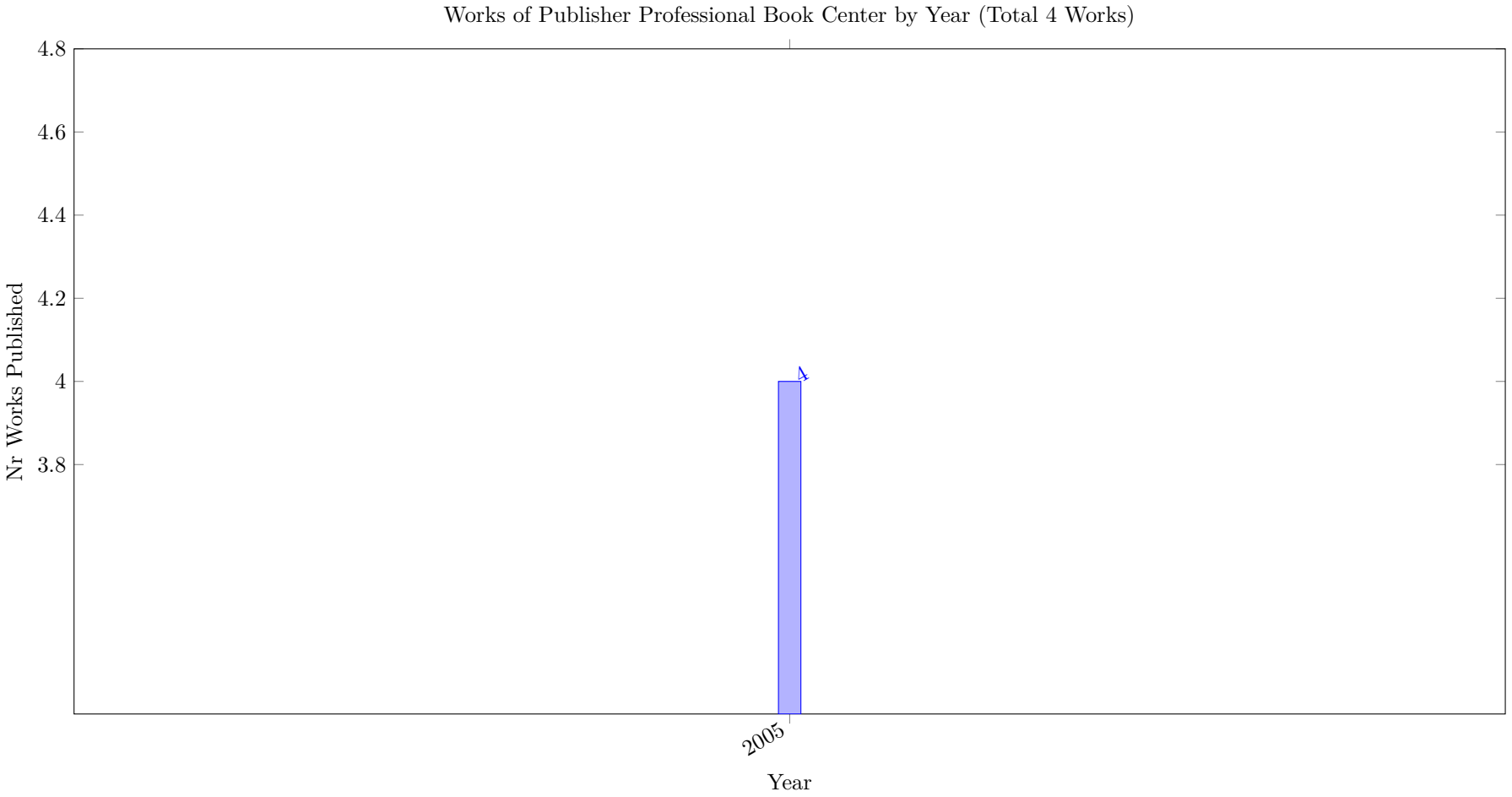
Works of Publisher Professional Book Center by Year (Total 4 Works)
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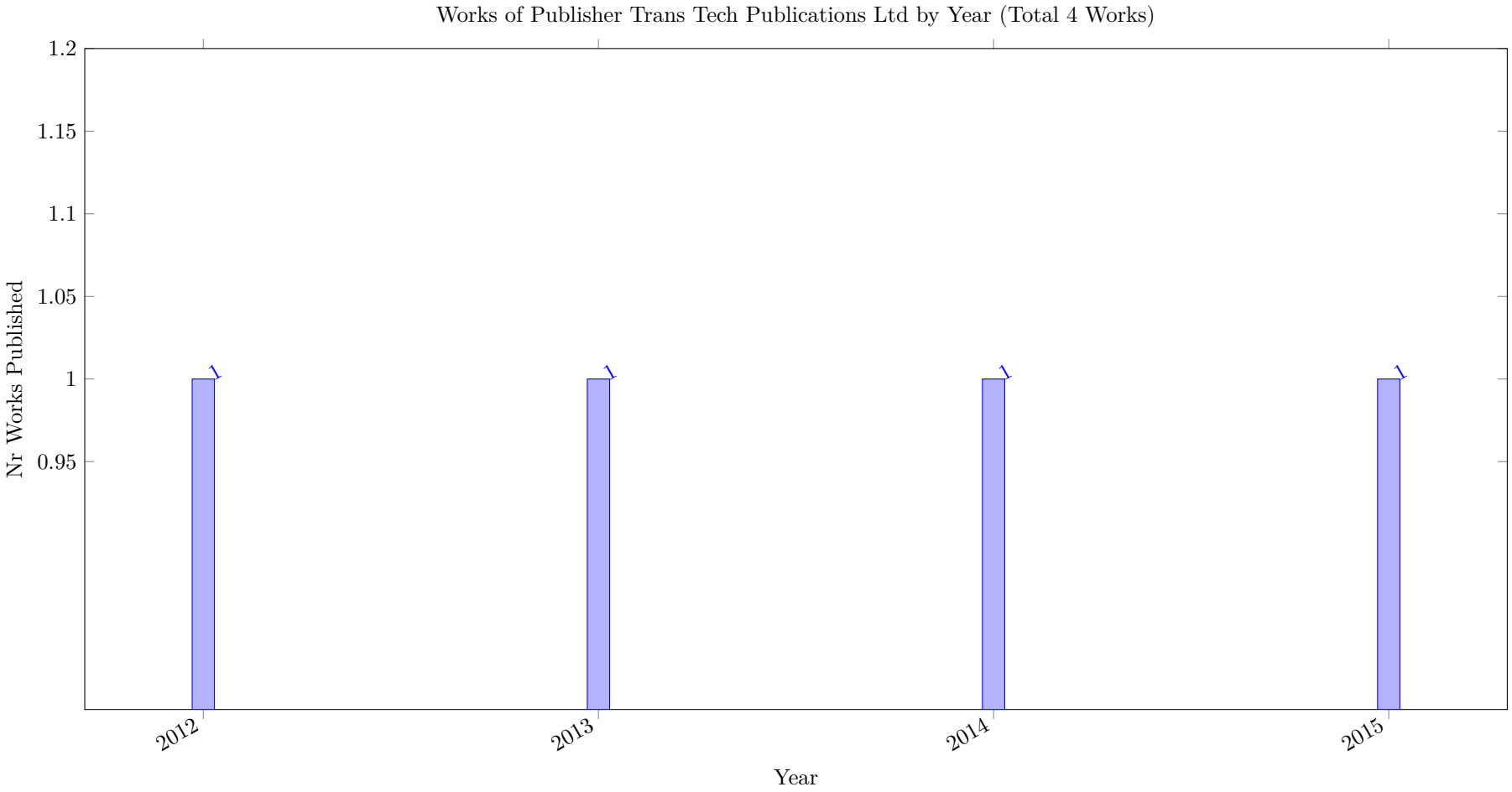
4
2005
Year


Works of Publisher Trans Tech Publications Ltd by Year (Total 4 Works)
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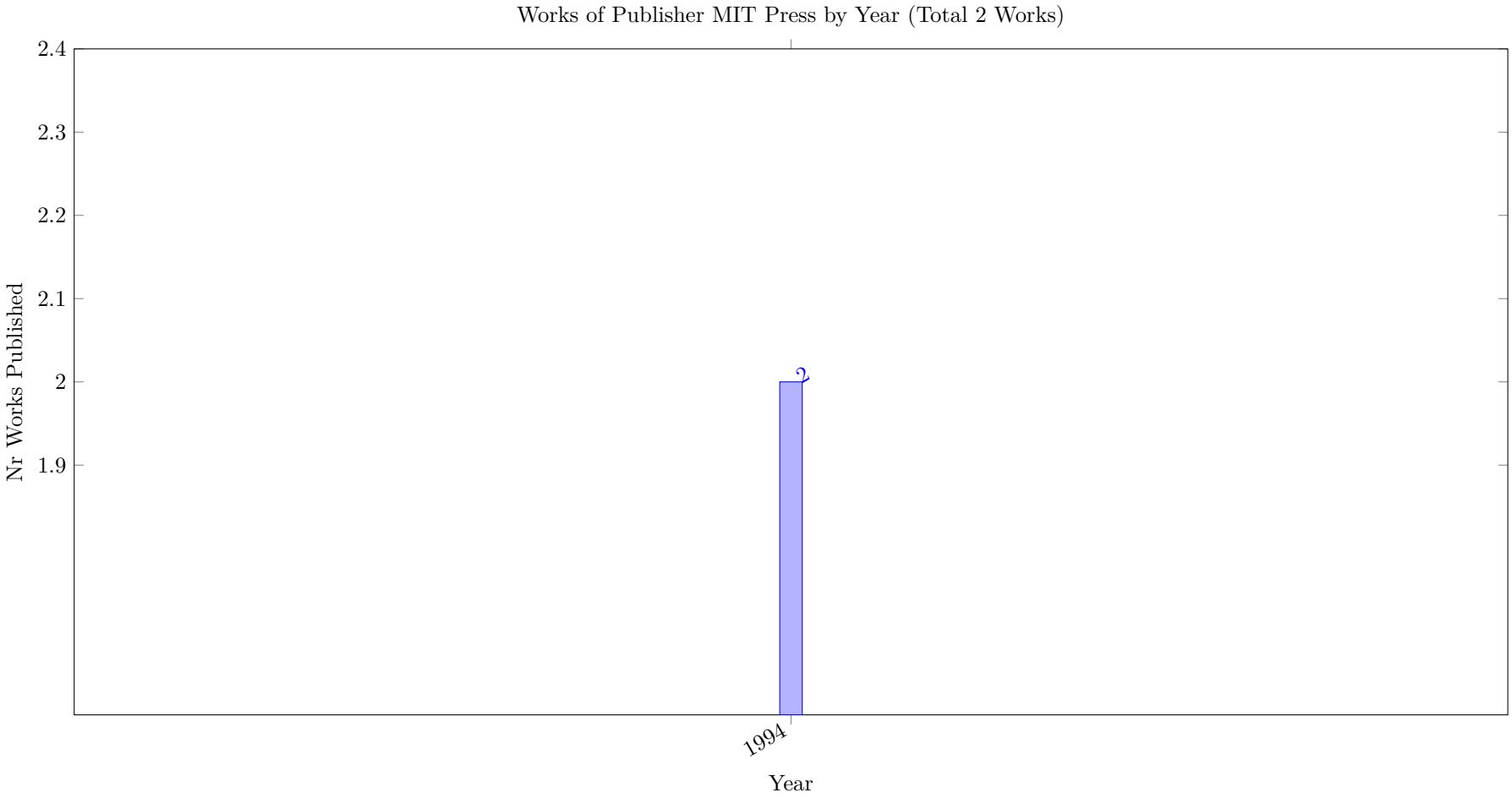
2013
2014
2015
Year


Works of Publisher MIT Press by Year (Total 2 Works)
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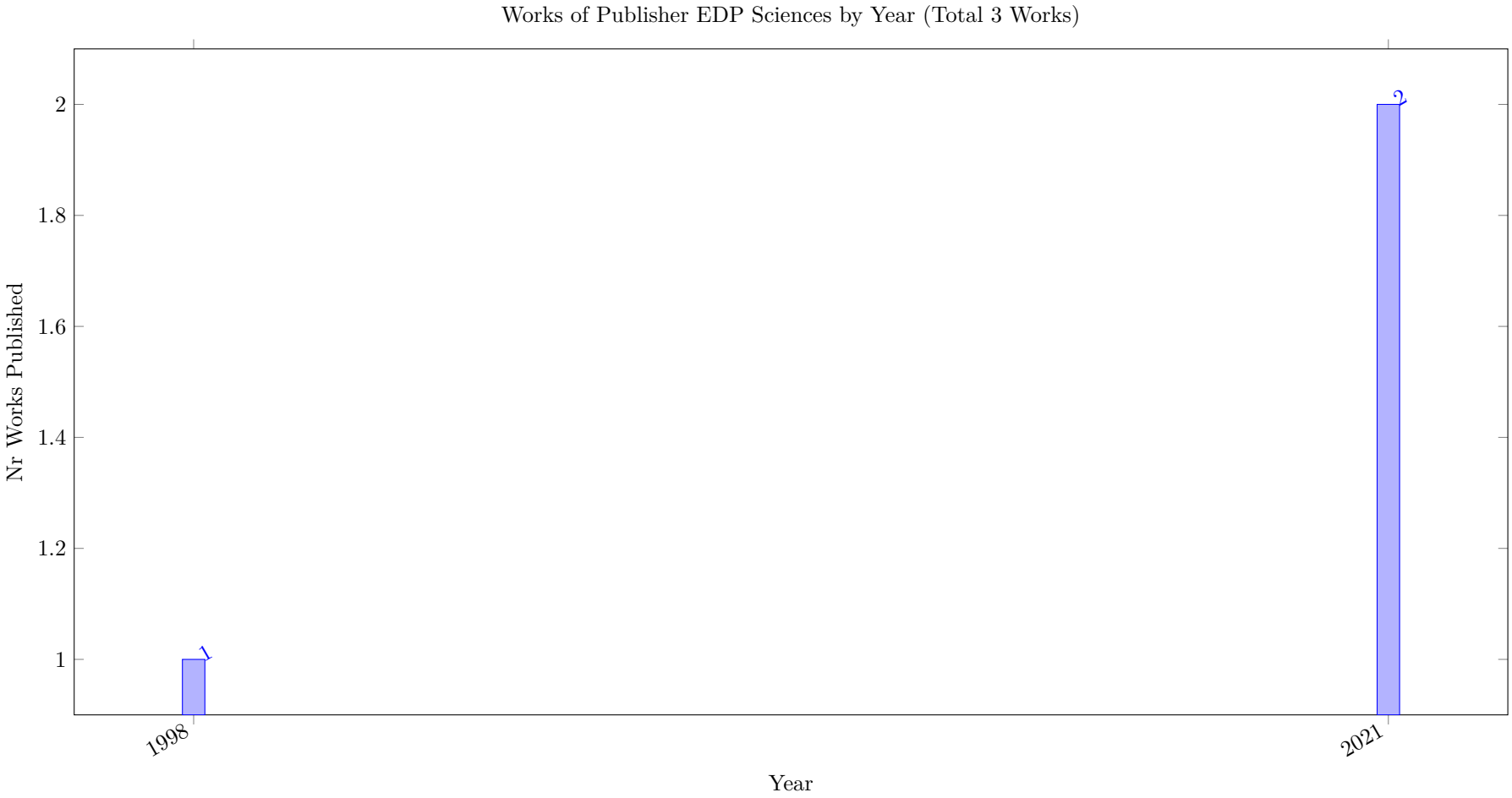
1994
Year


Works of Publisher EDP Sciences by Year (Total 3 Works)
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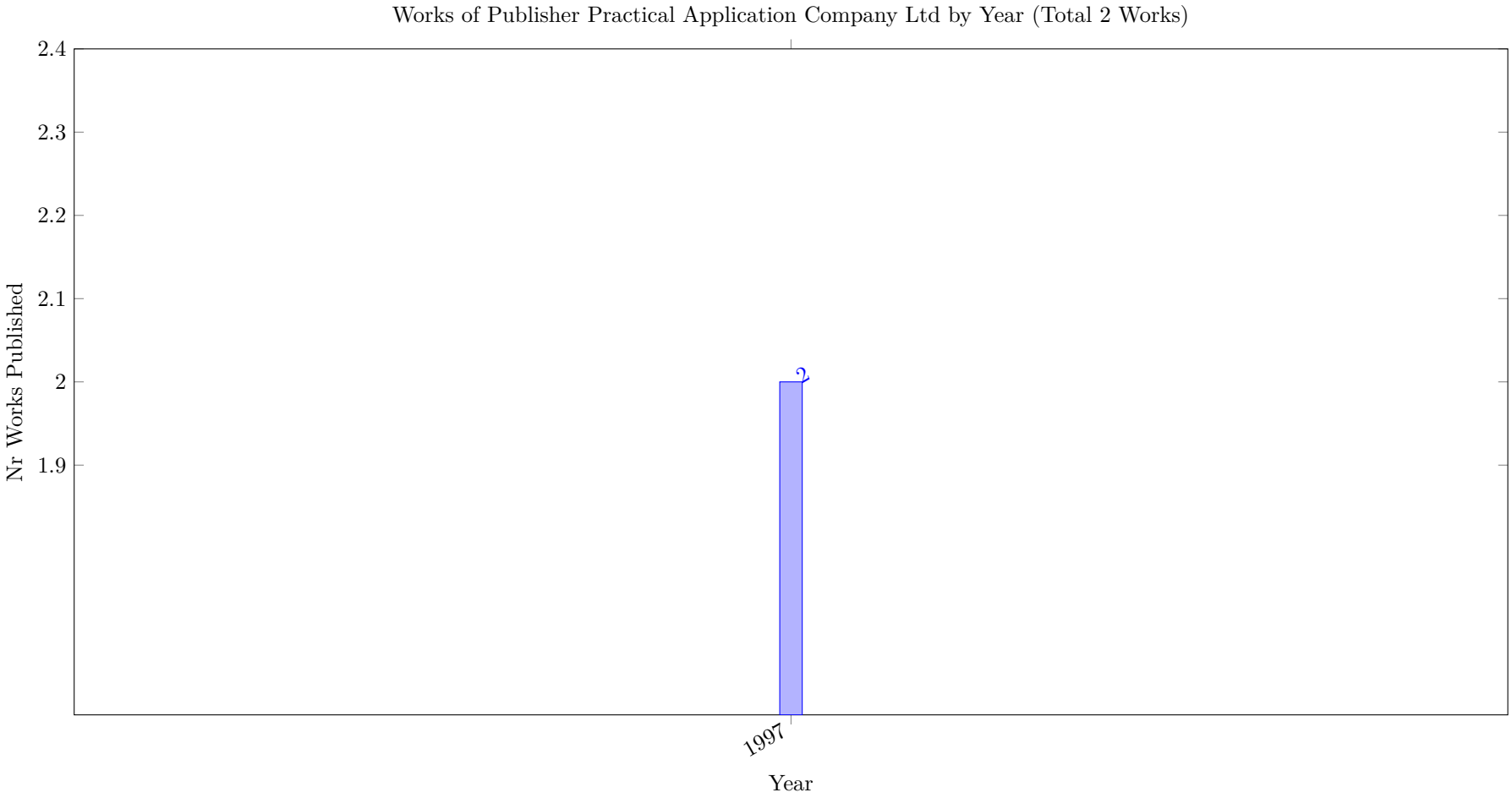
Year


Works of Publisher Practical Application Company Ltd by Year (Total 2 Works)
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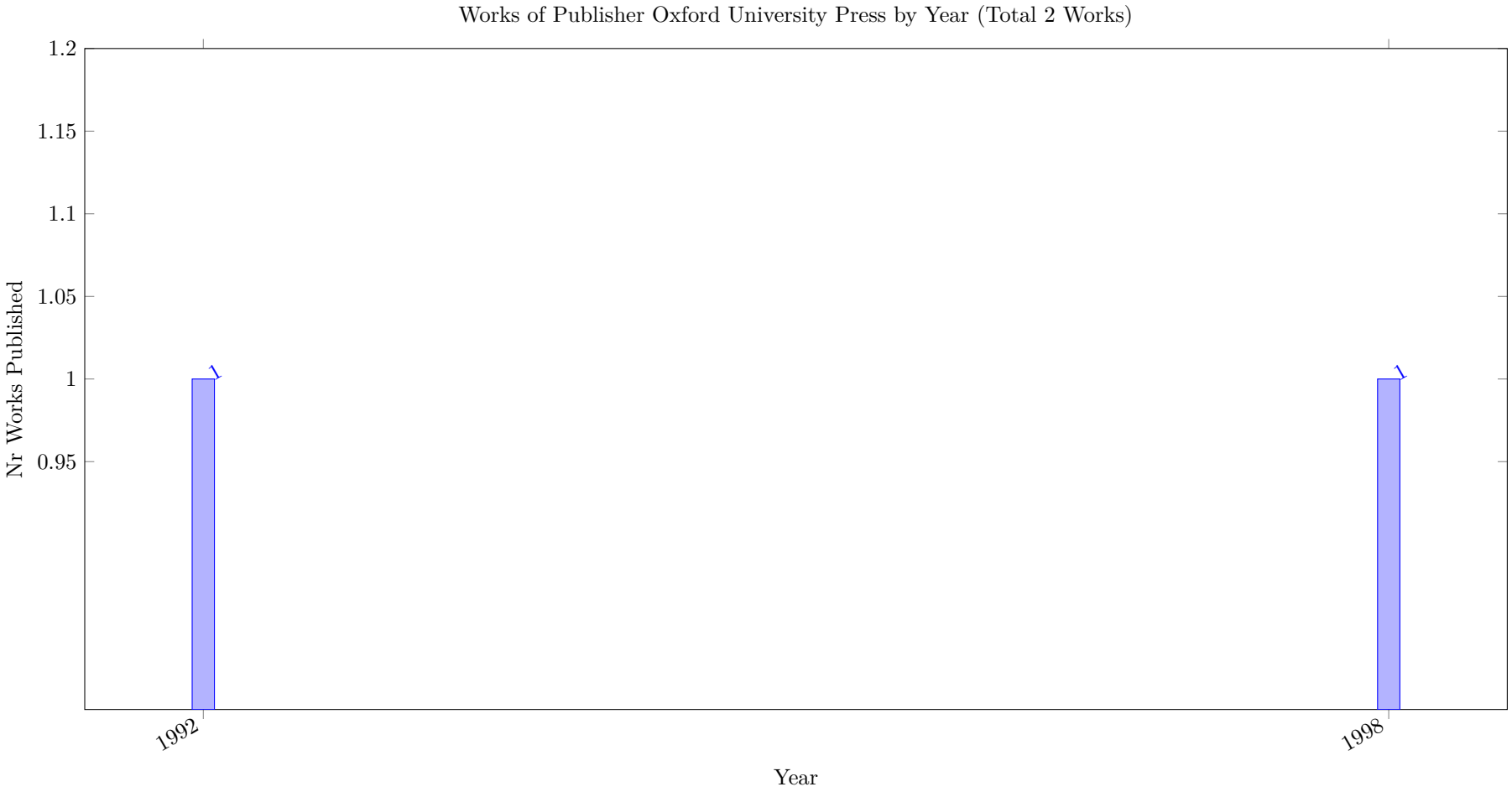
Works of Publisher Oxford University Press by Year (Total 2 Works)
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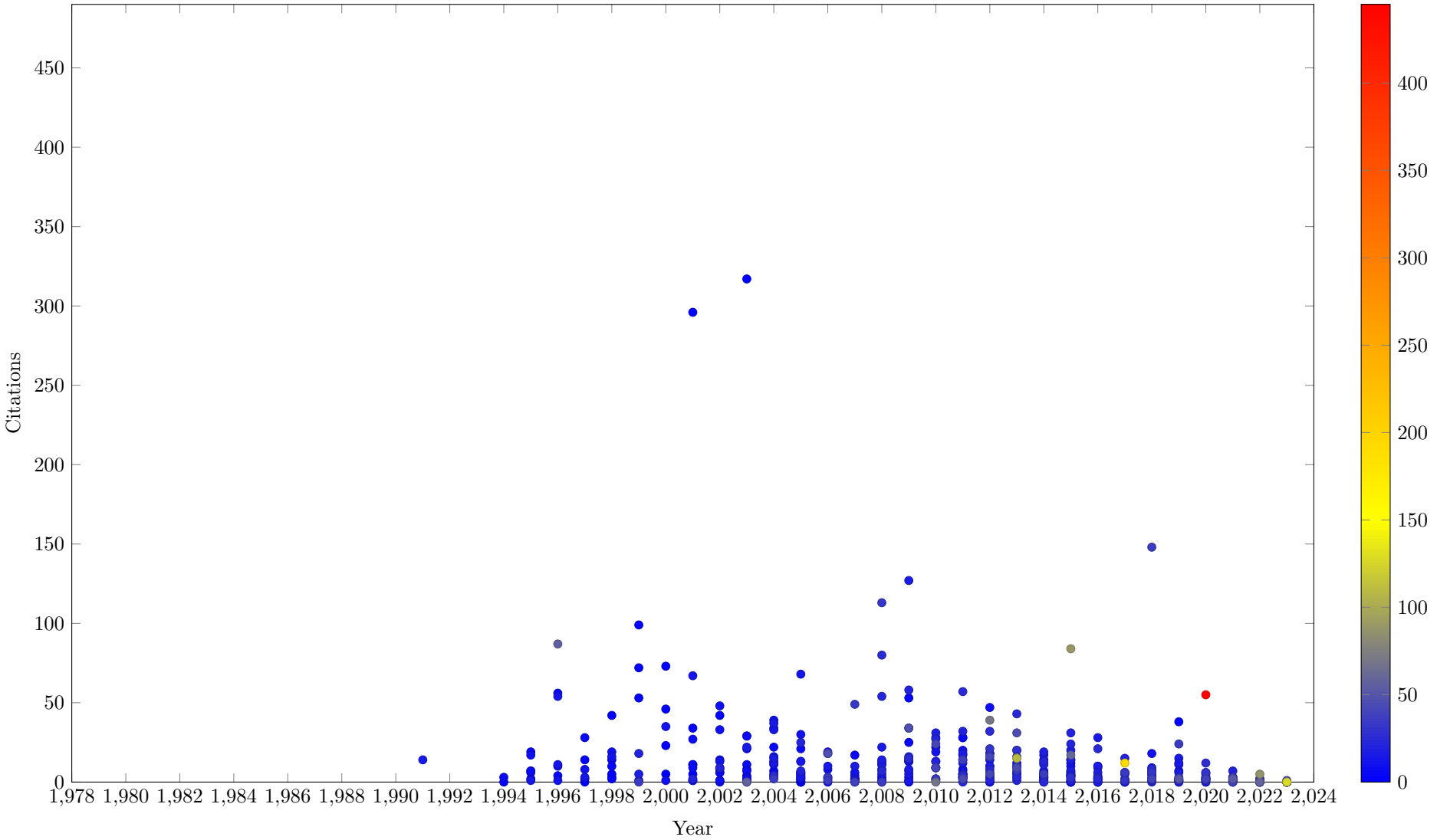
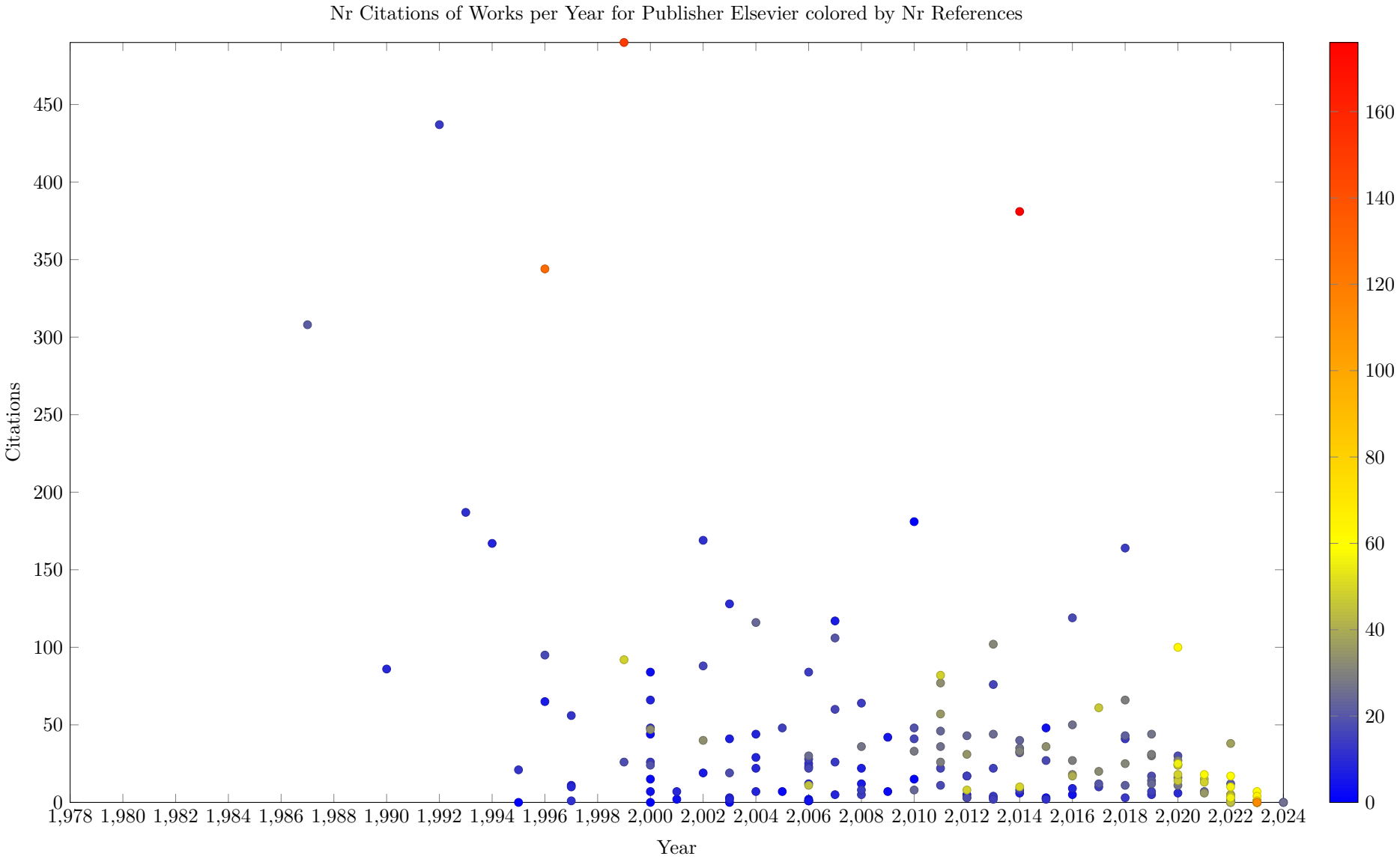
1
1992
1998
Year

Nr Citations of Works per Year for Publisher Springer colored by Nr References




Nr Citations of Works per Year for Publisher Elsevier colored by Nr References
Citations
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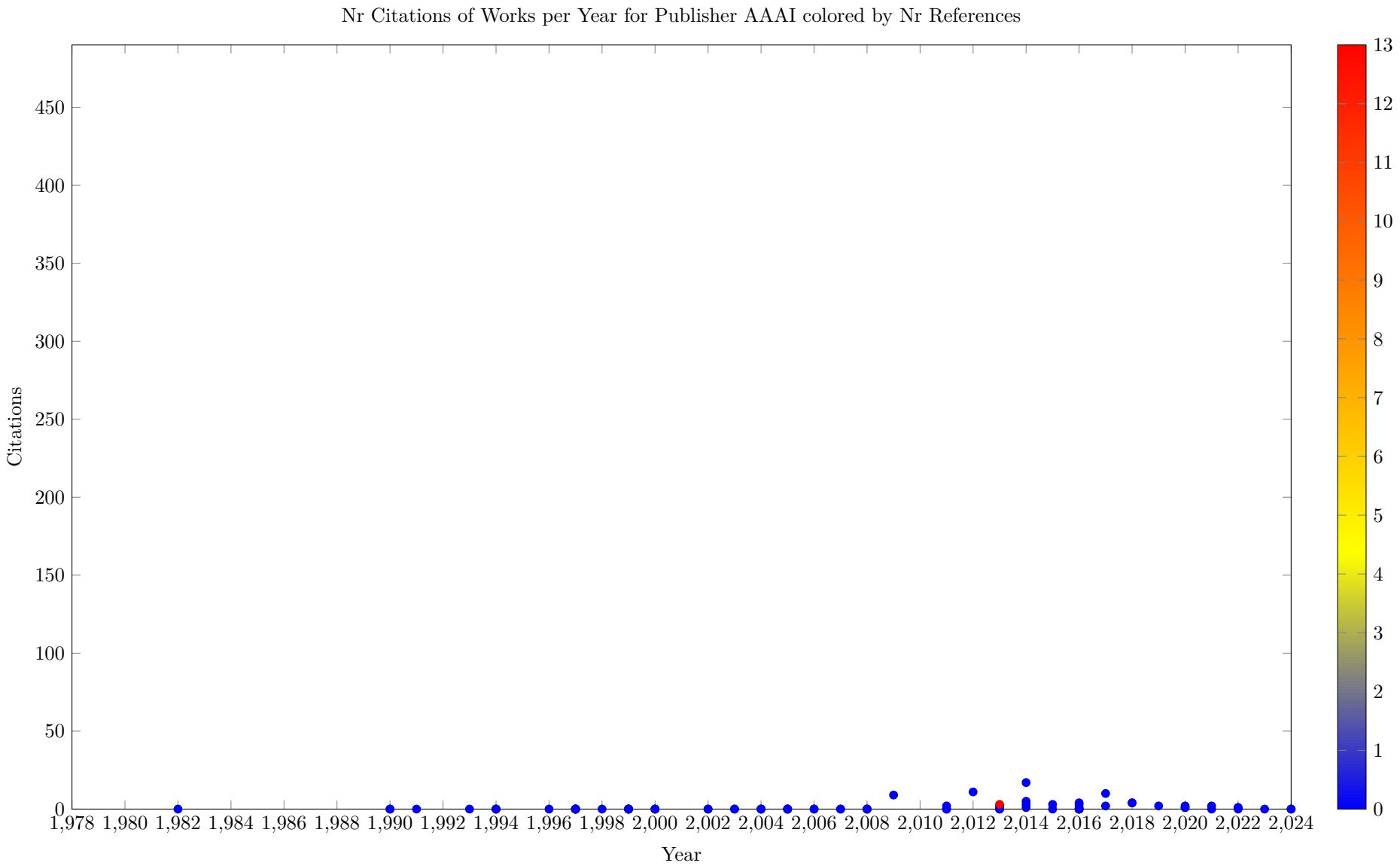
Nr Citations of Works per Year for Publisher AAAI colored by Nr References
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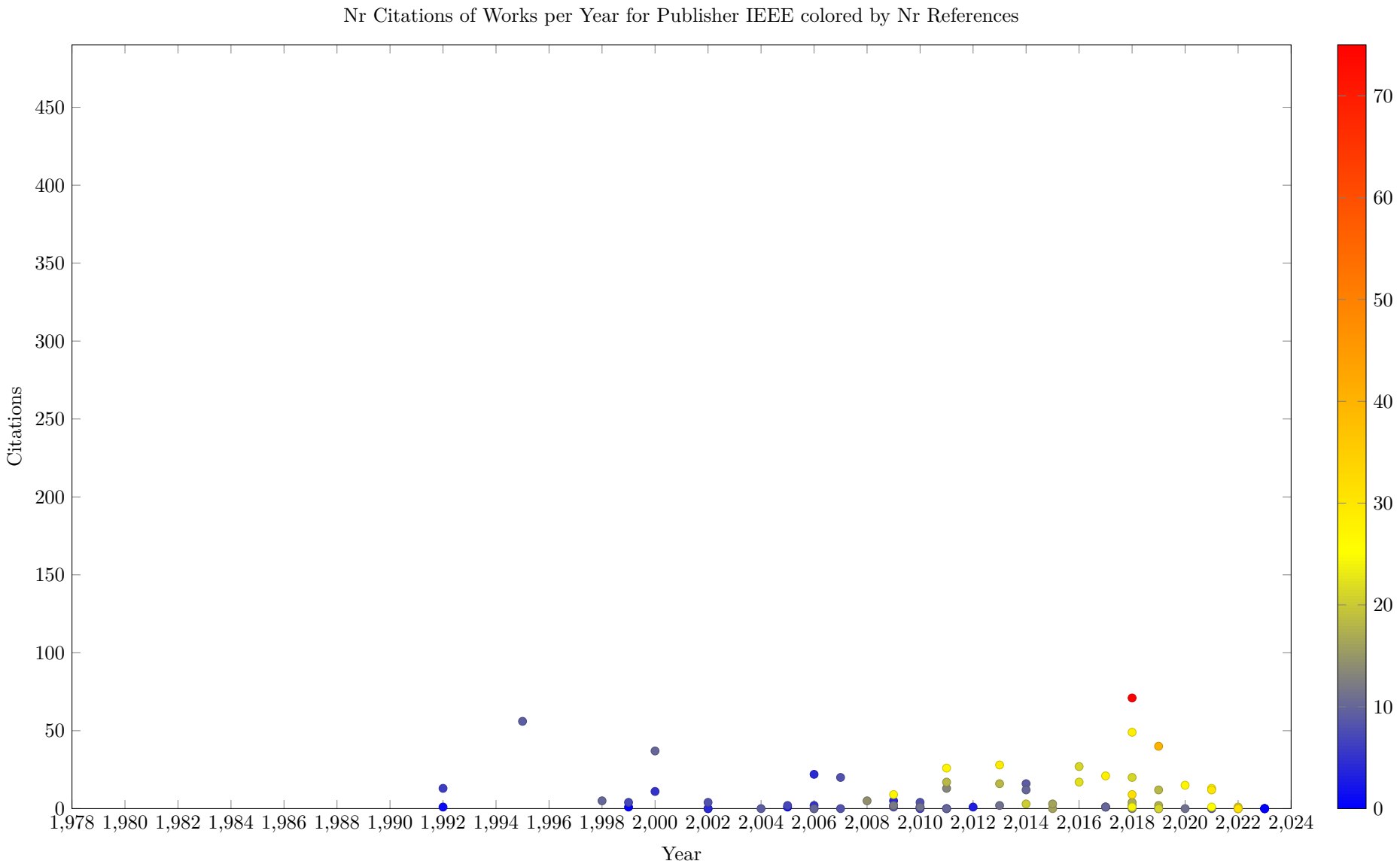
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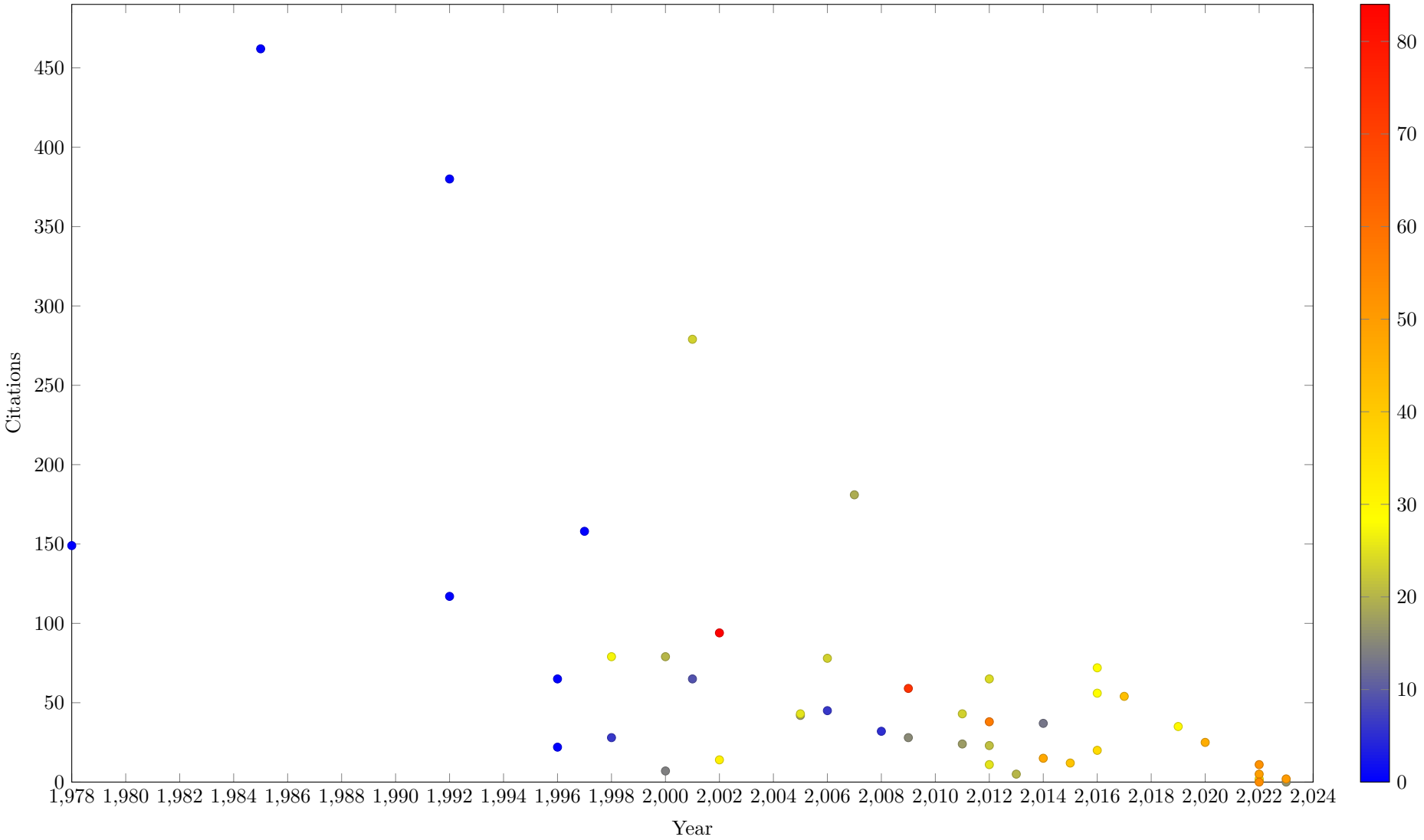
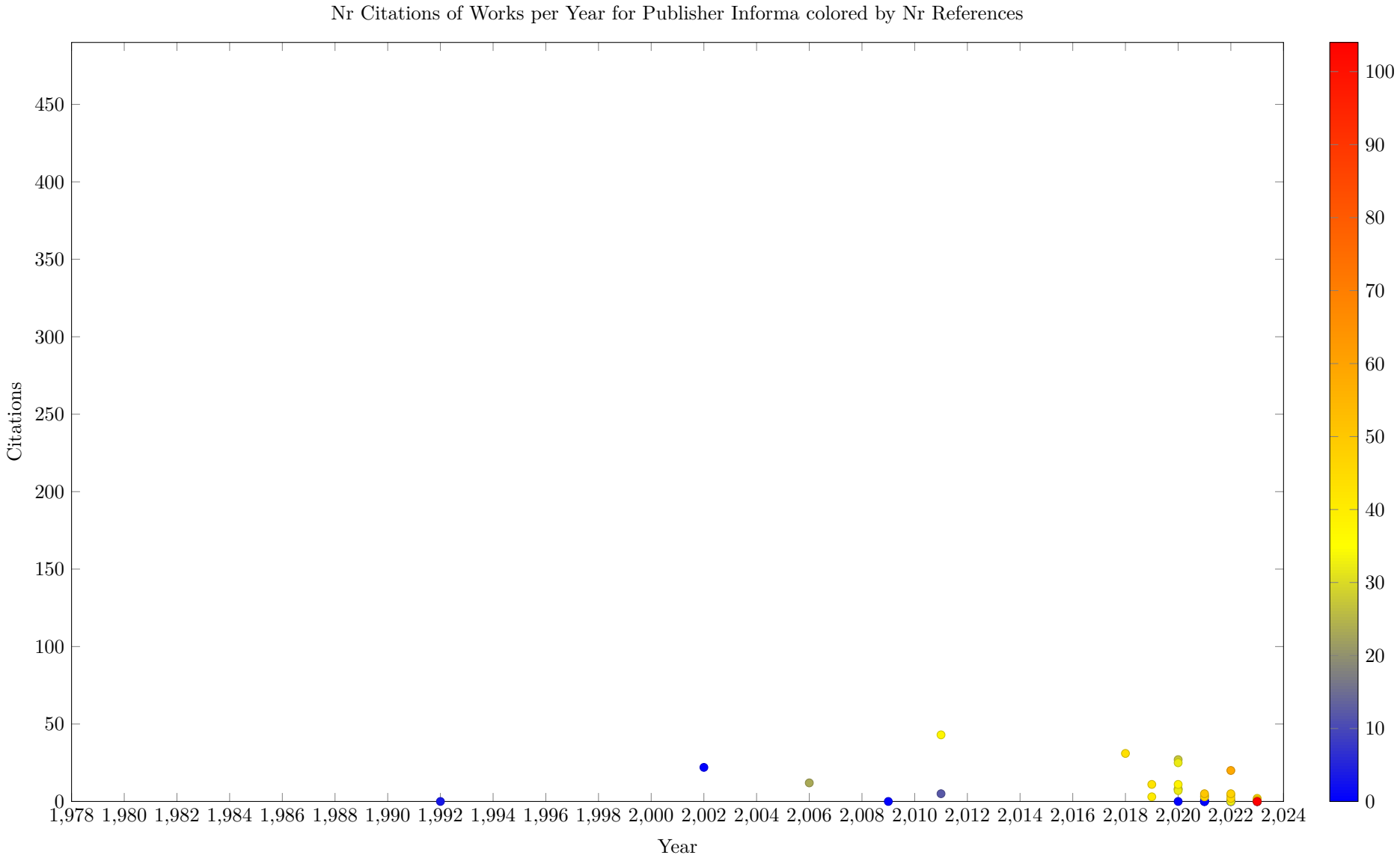
Nr Citations of Works per Year for Publisher INFORMS colored by Nr References

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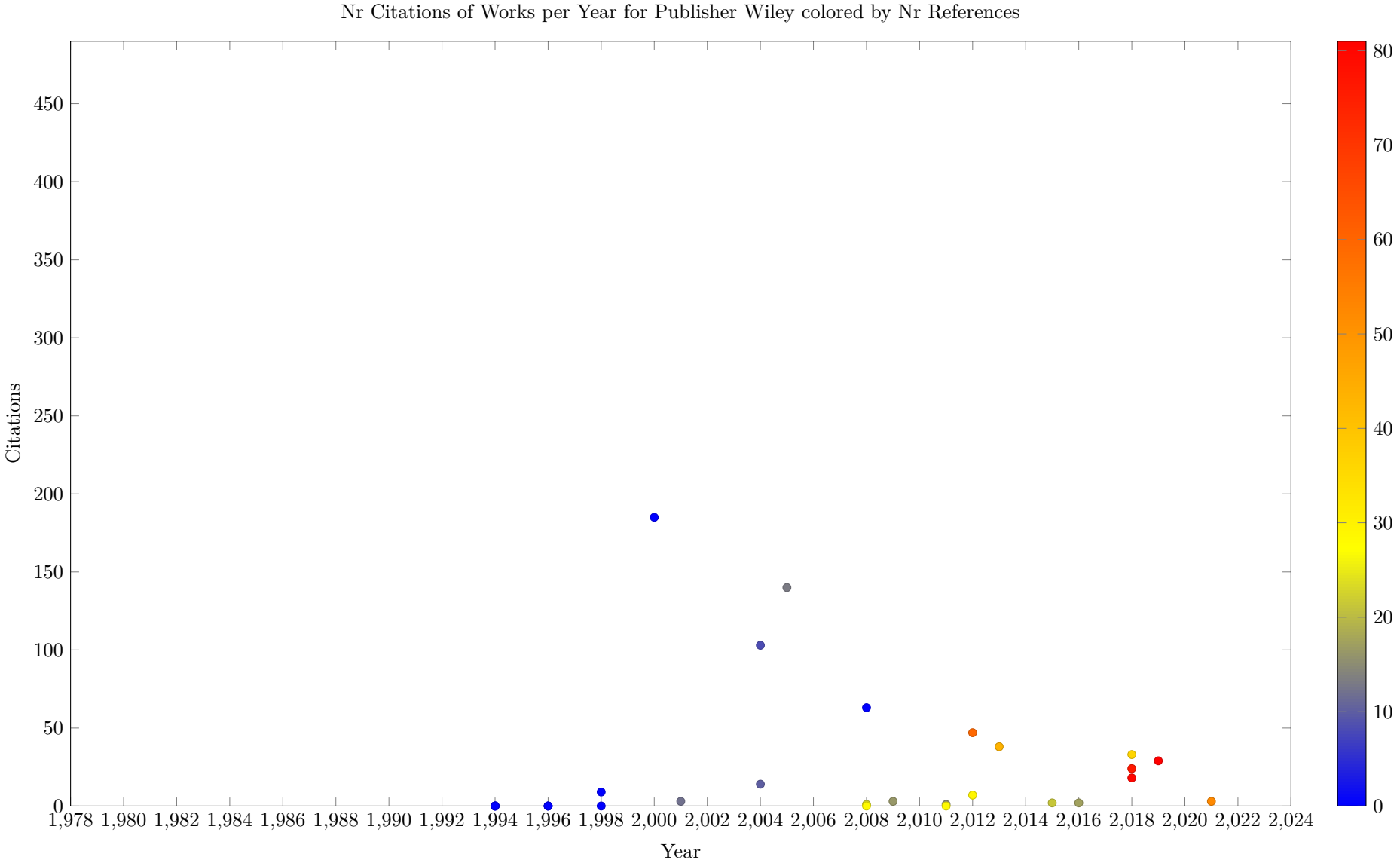
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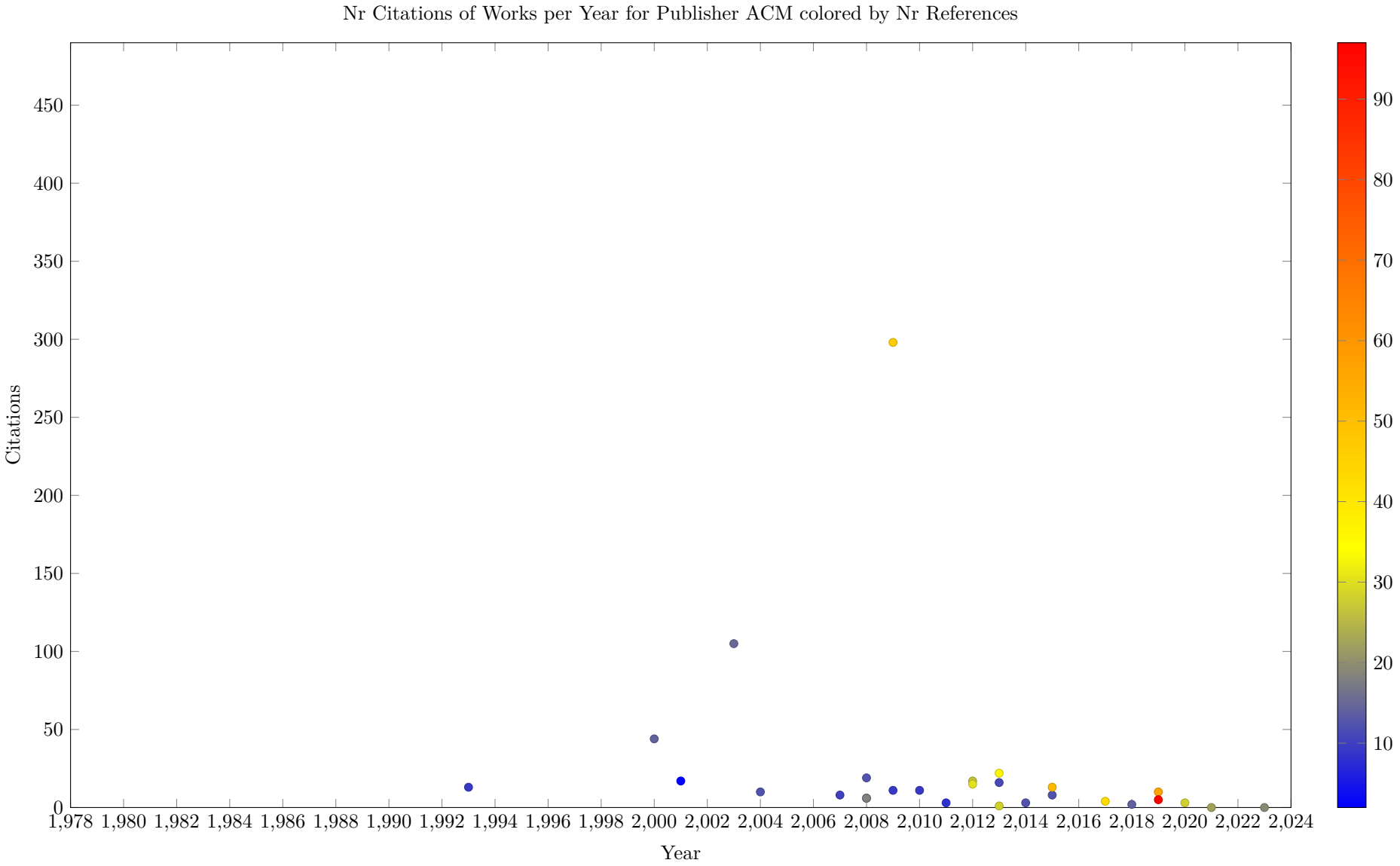
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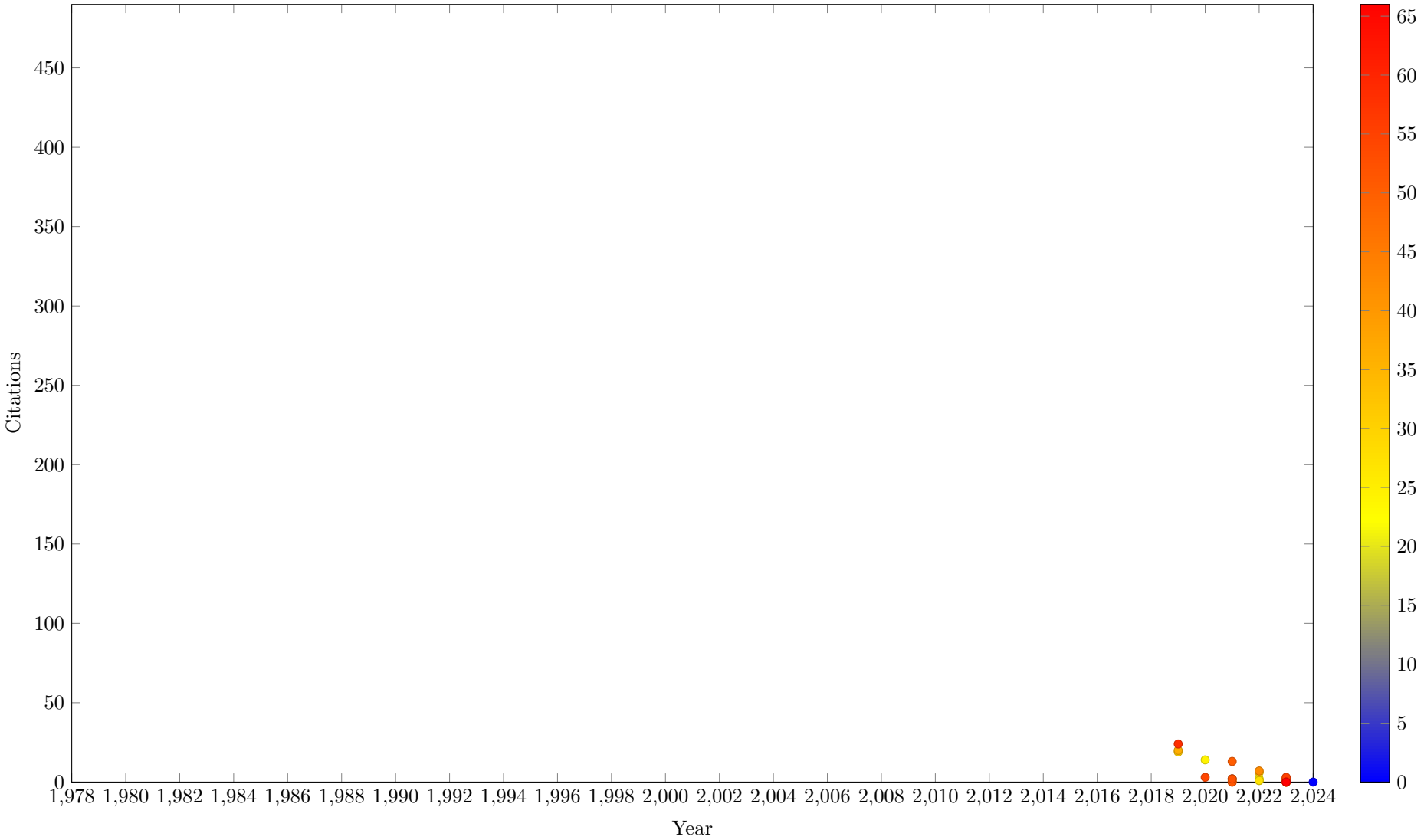

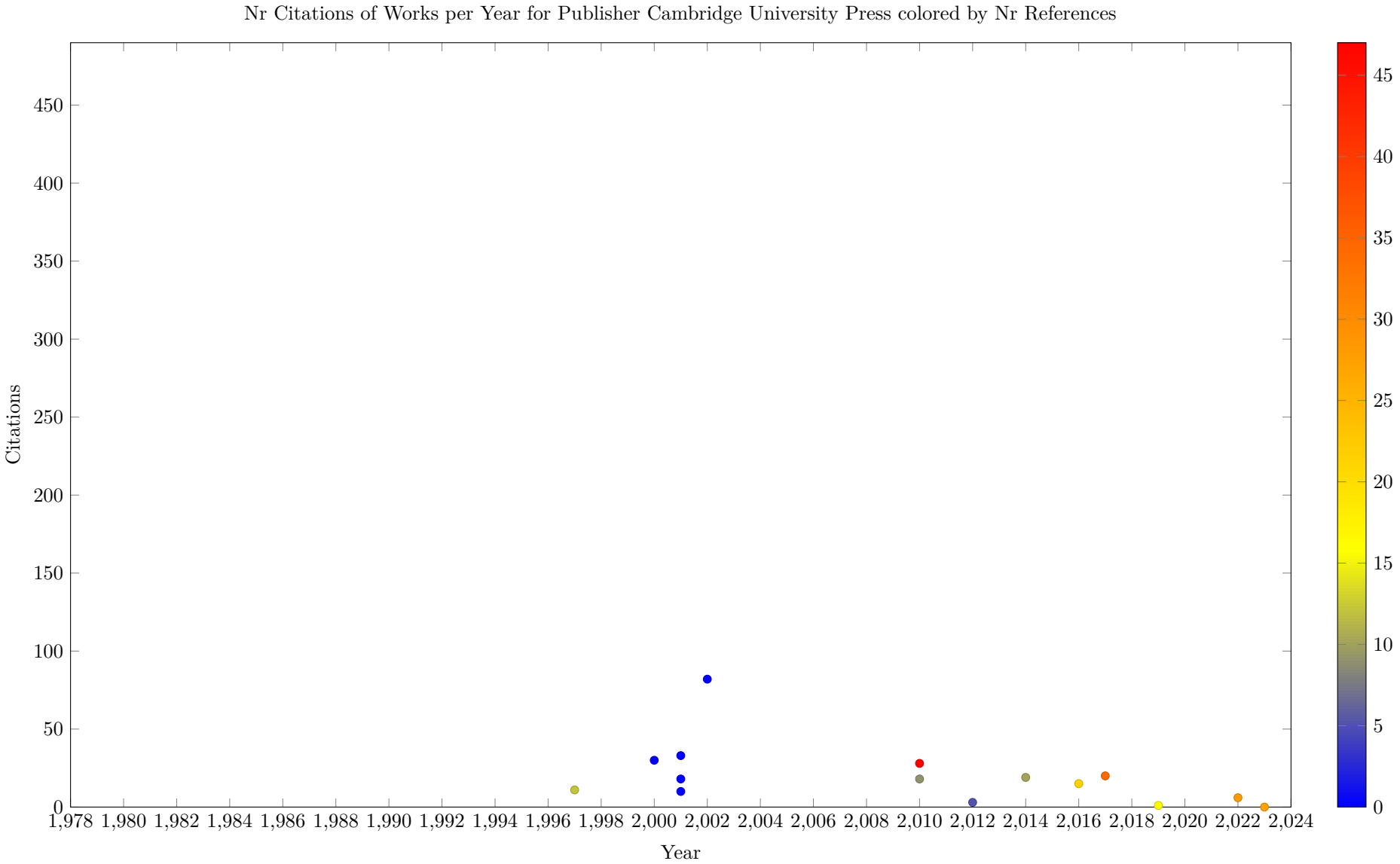
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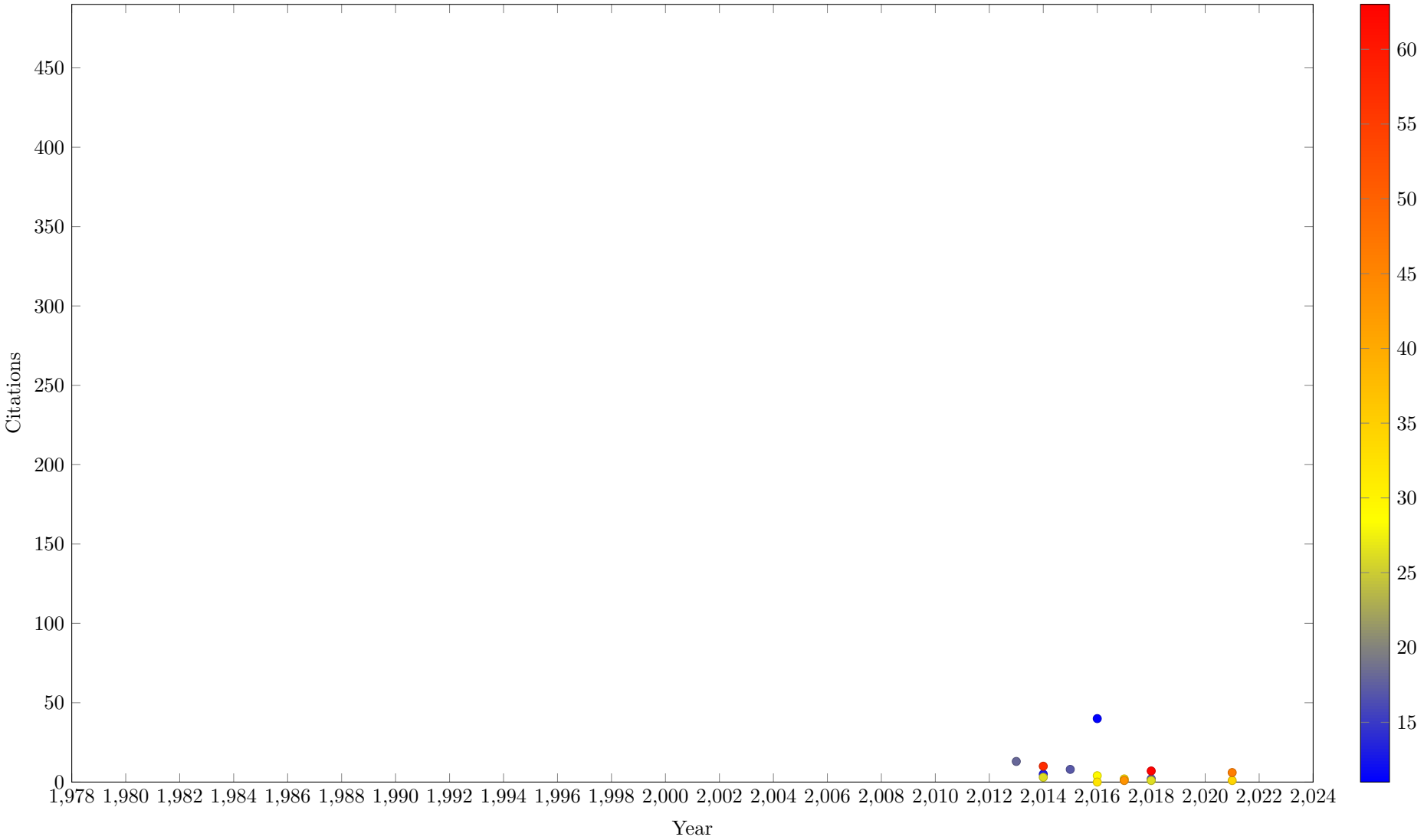

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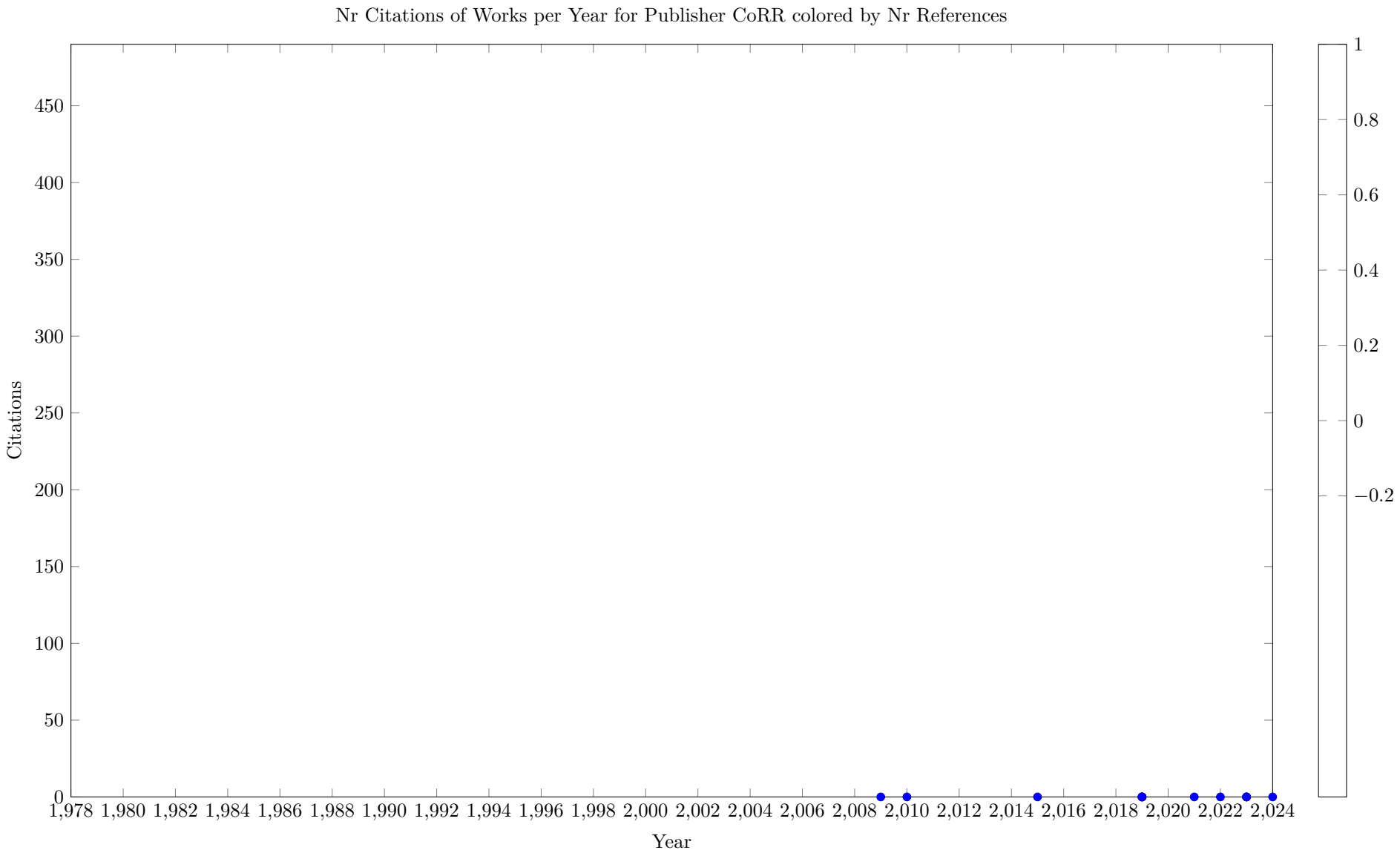
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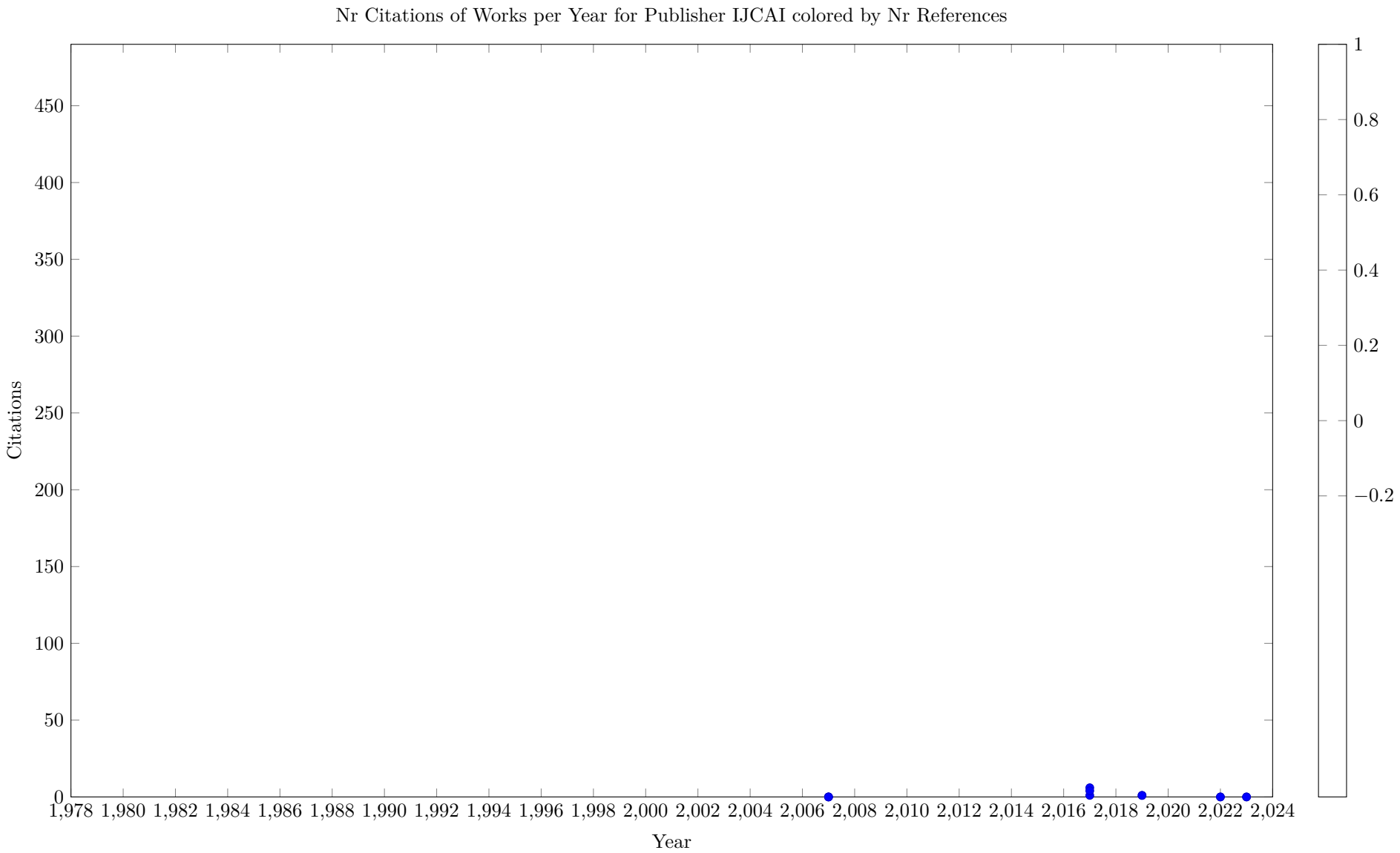
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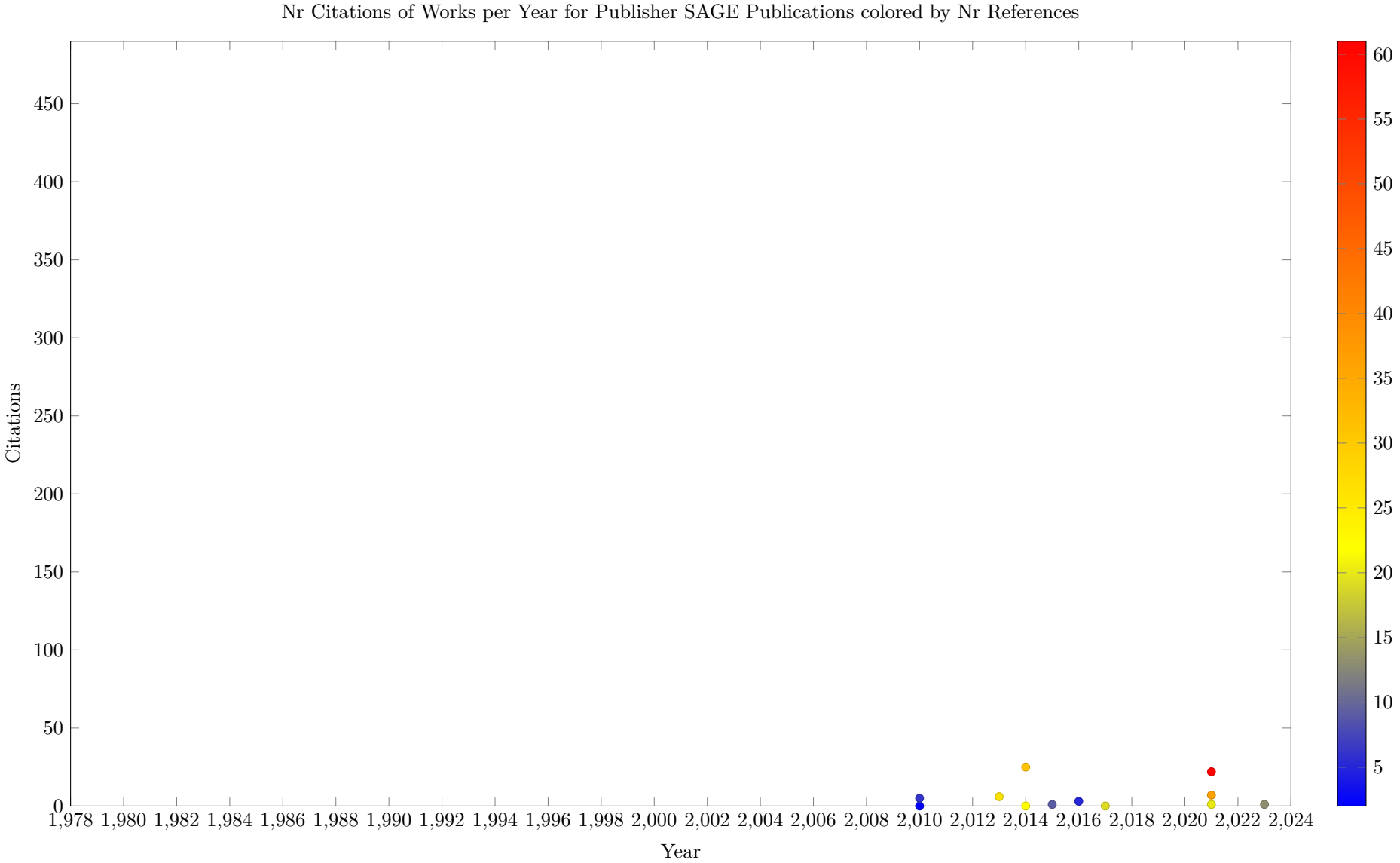
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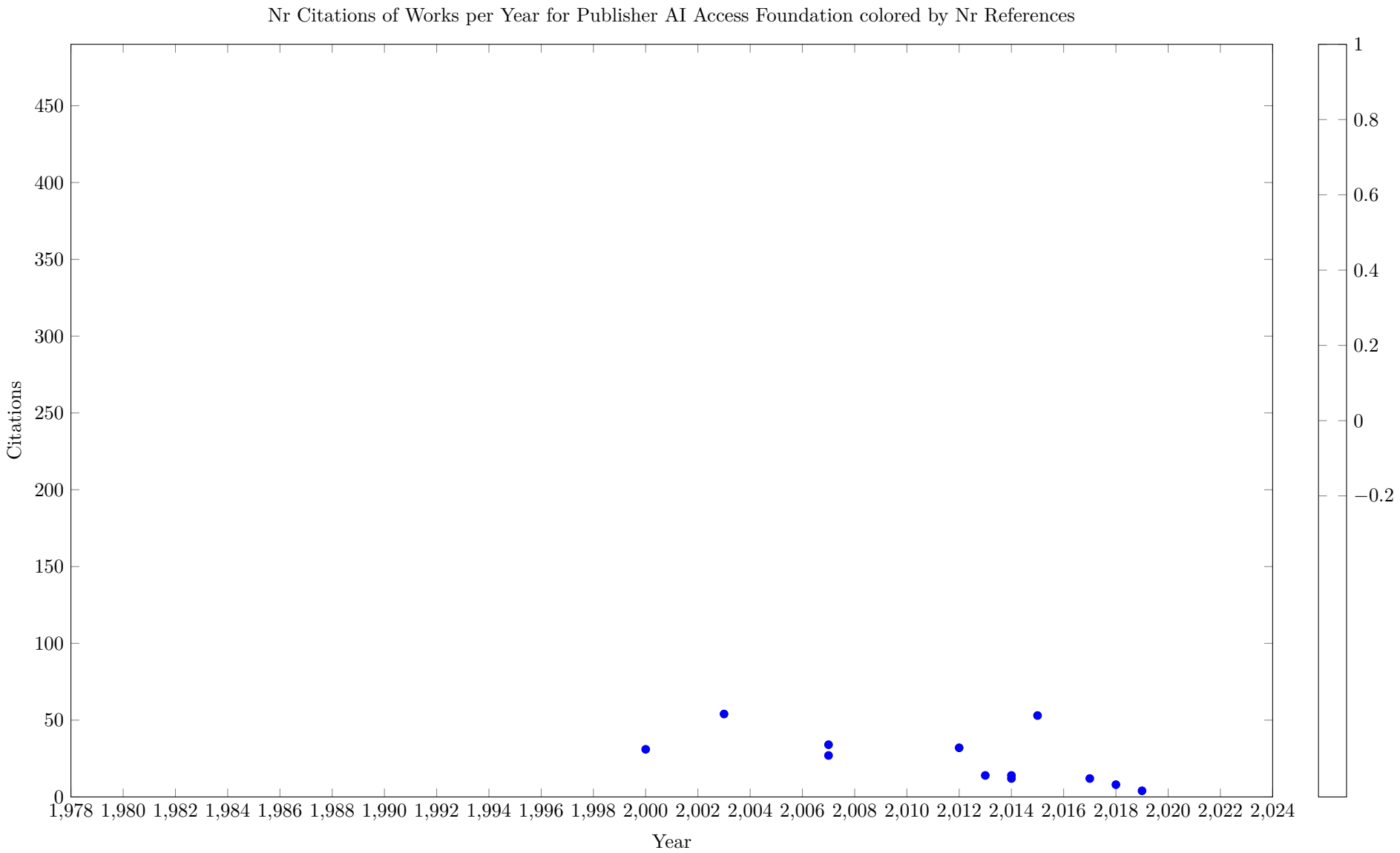
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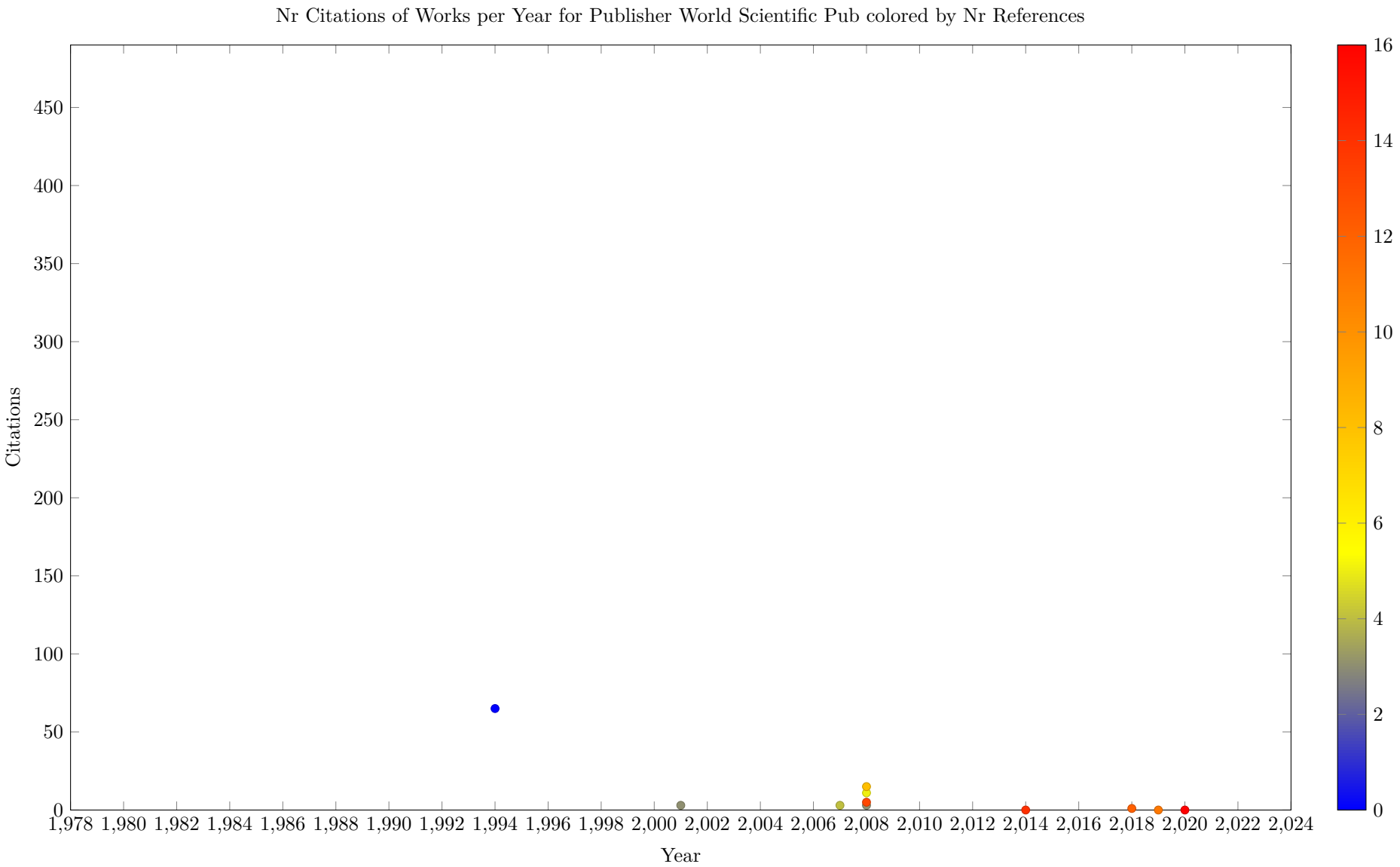
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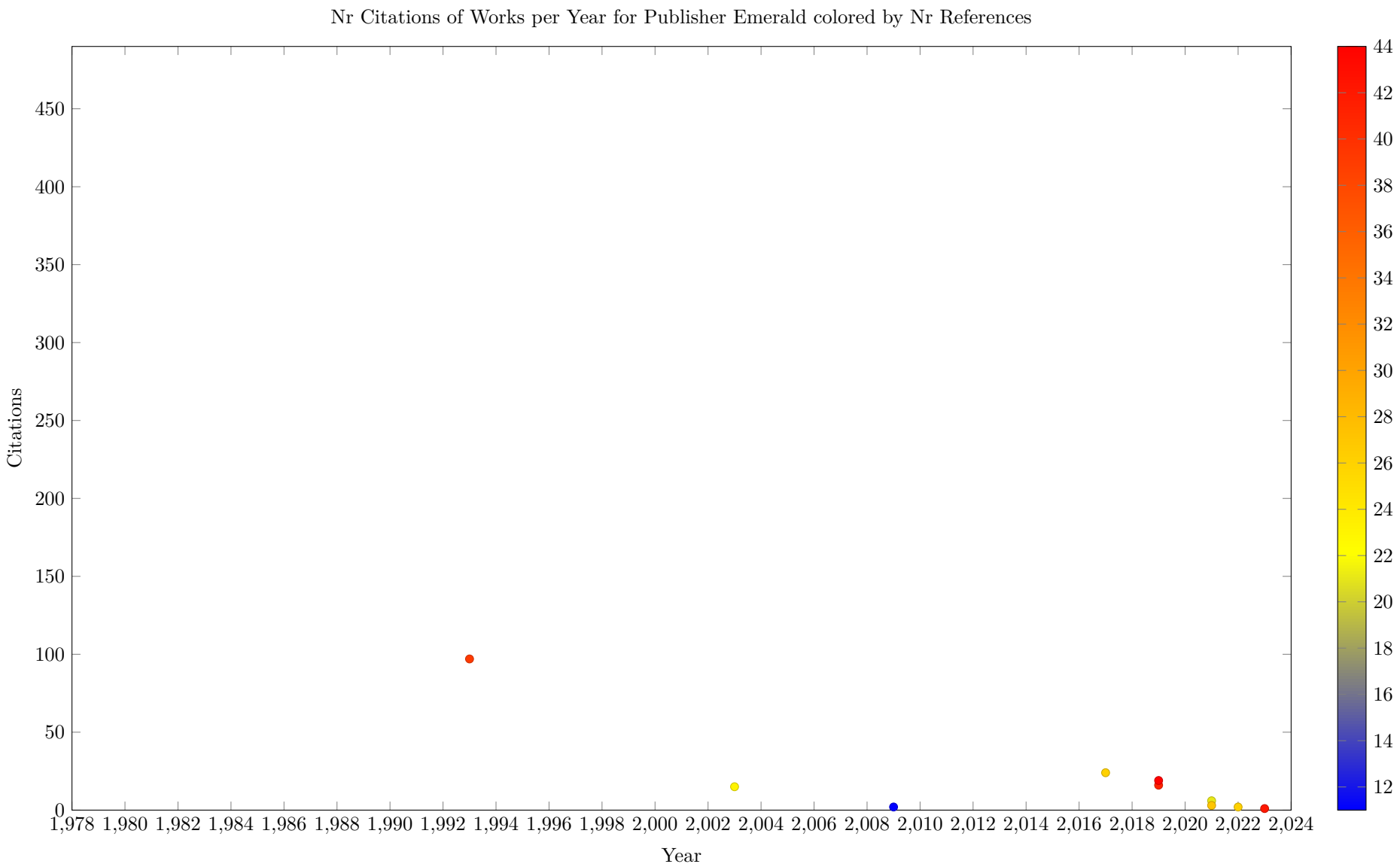
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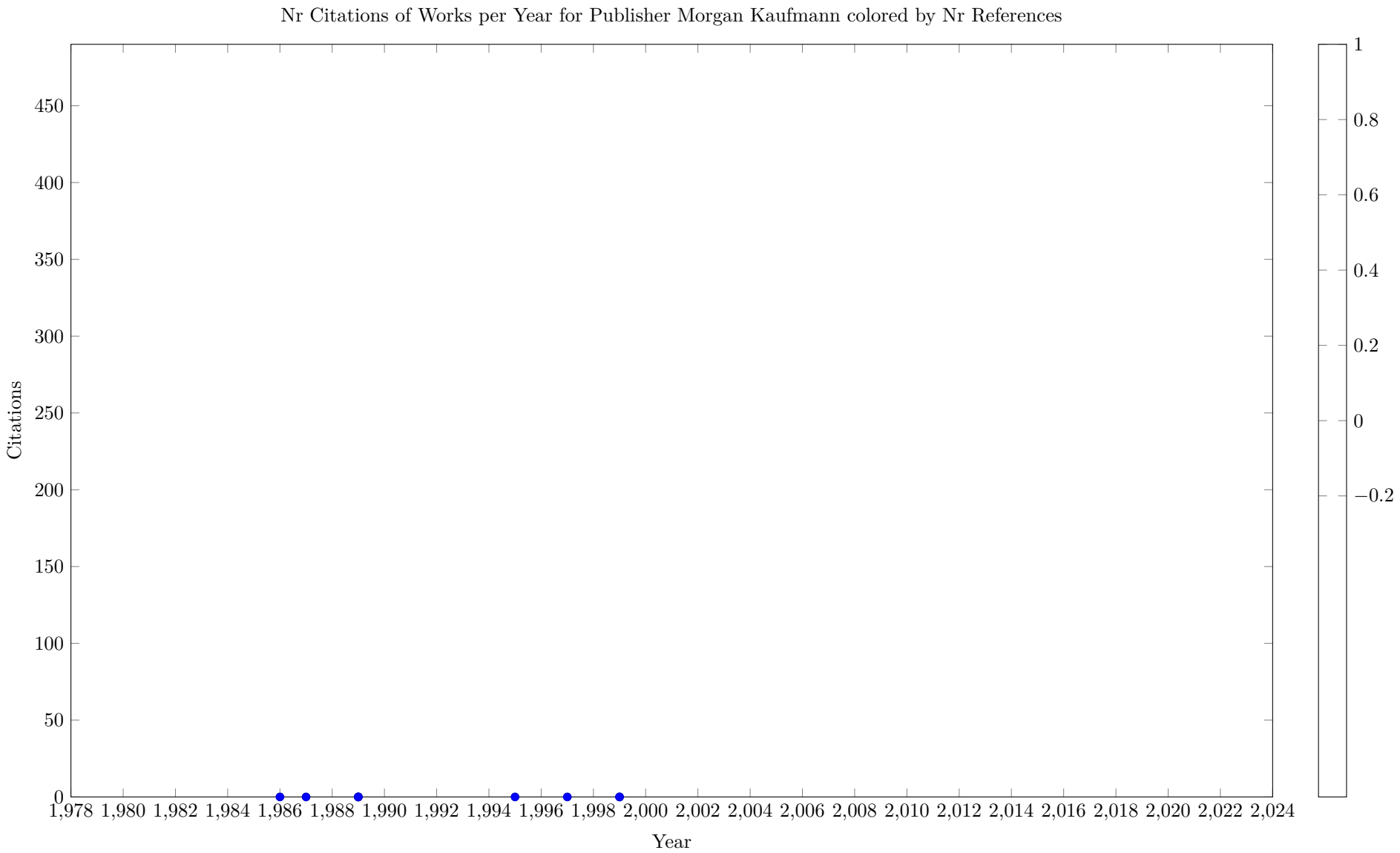
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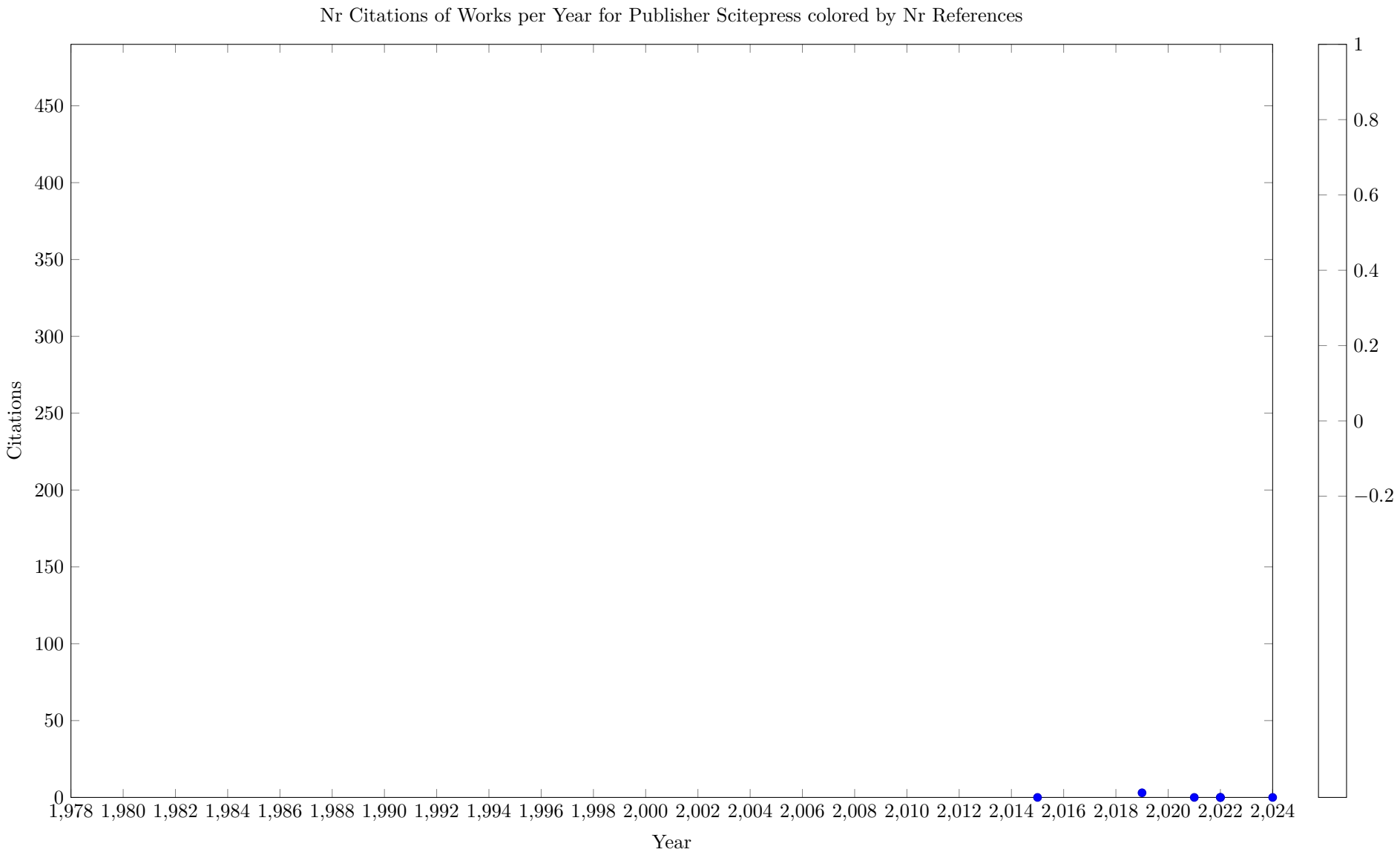
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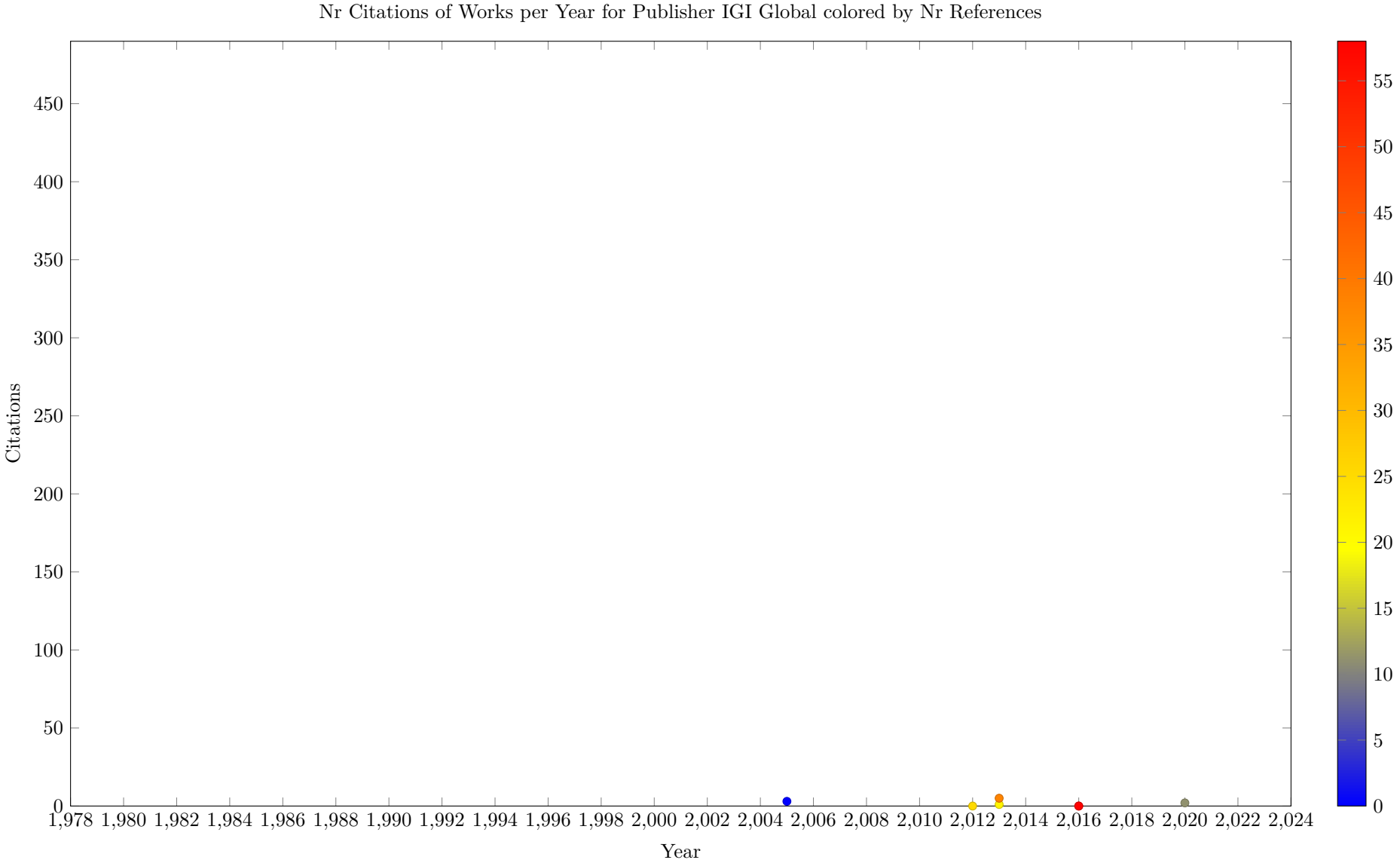
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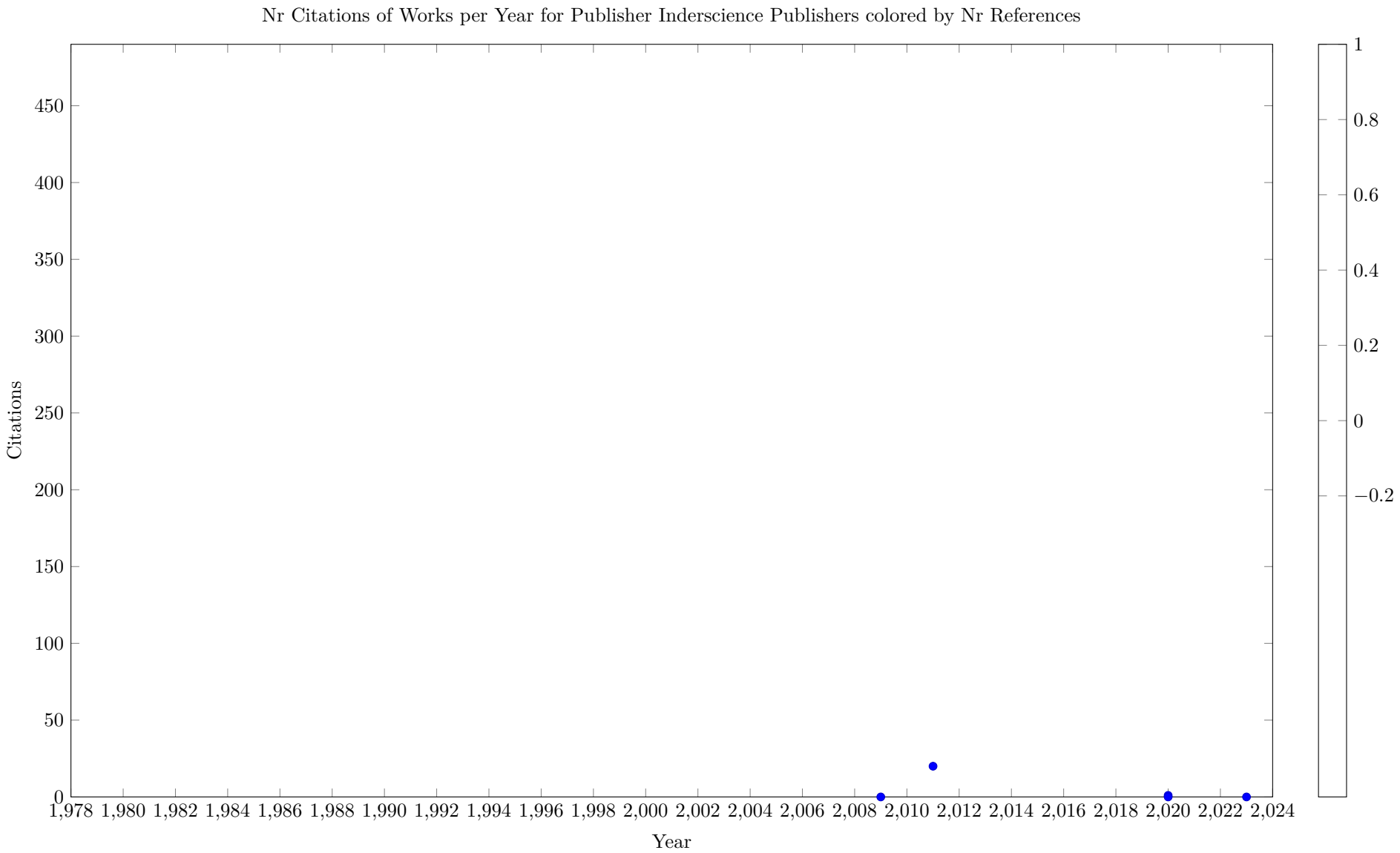
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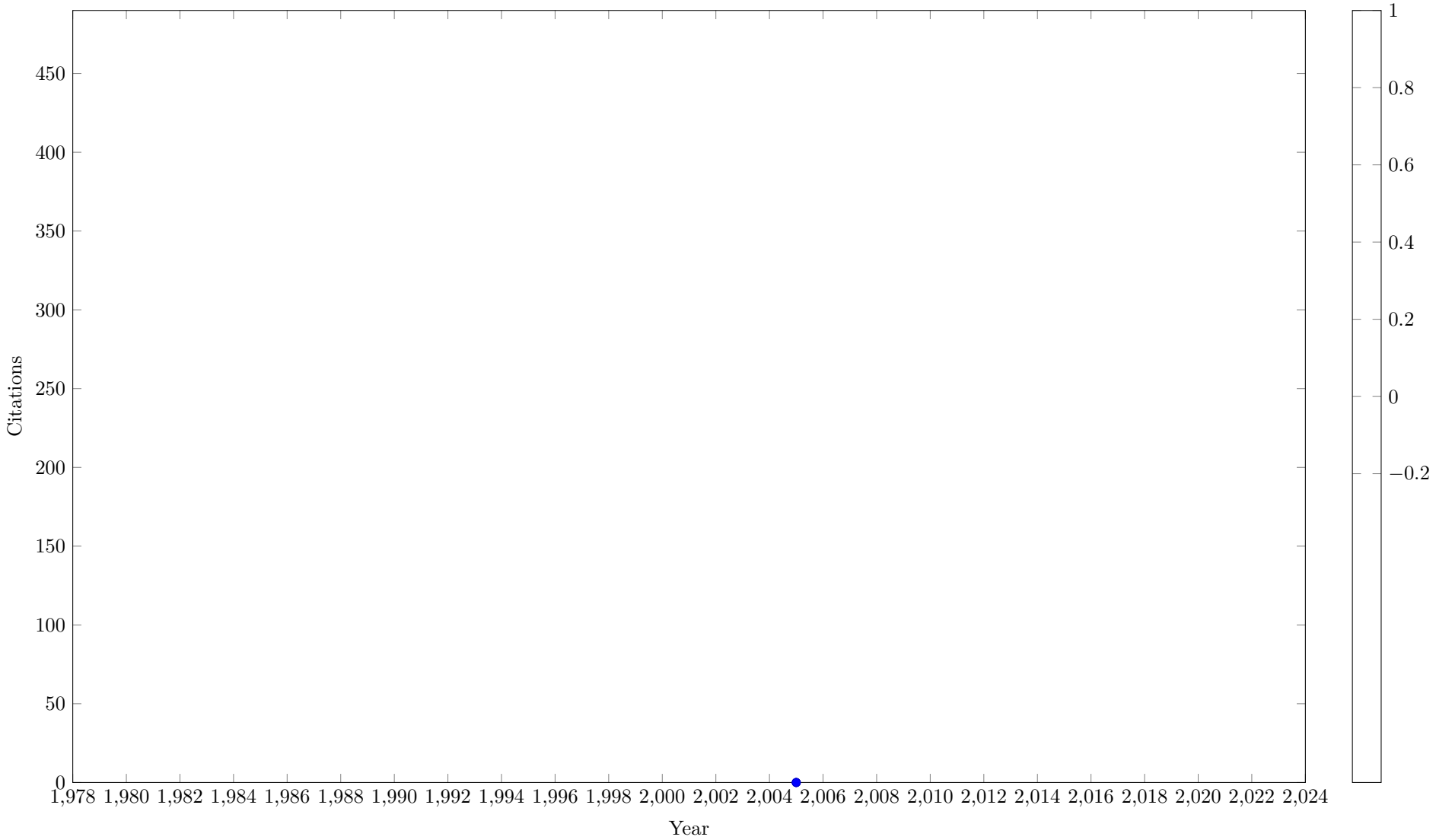

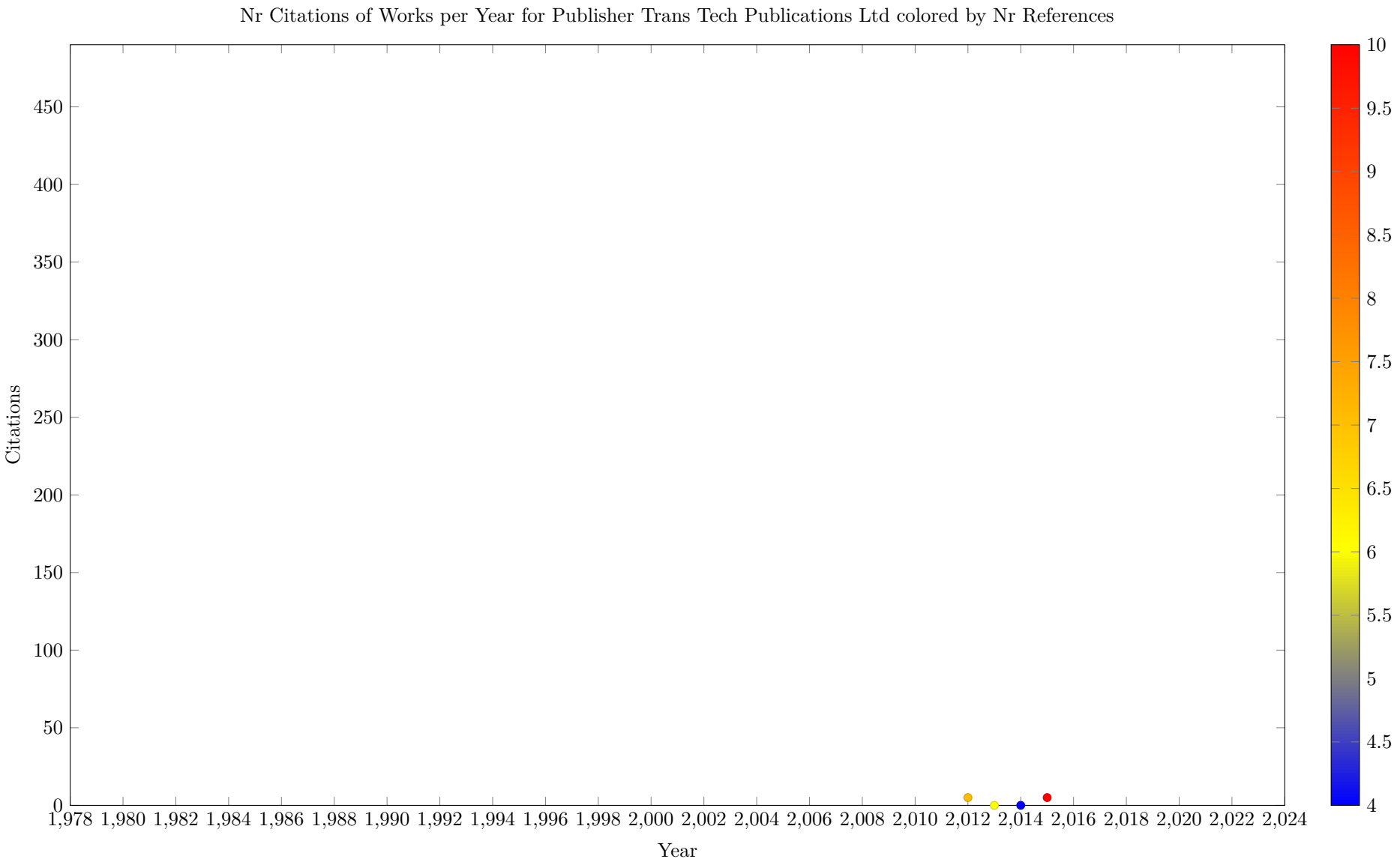
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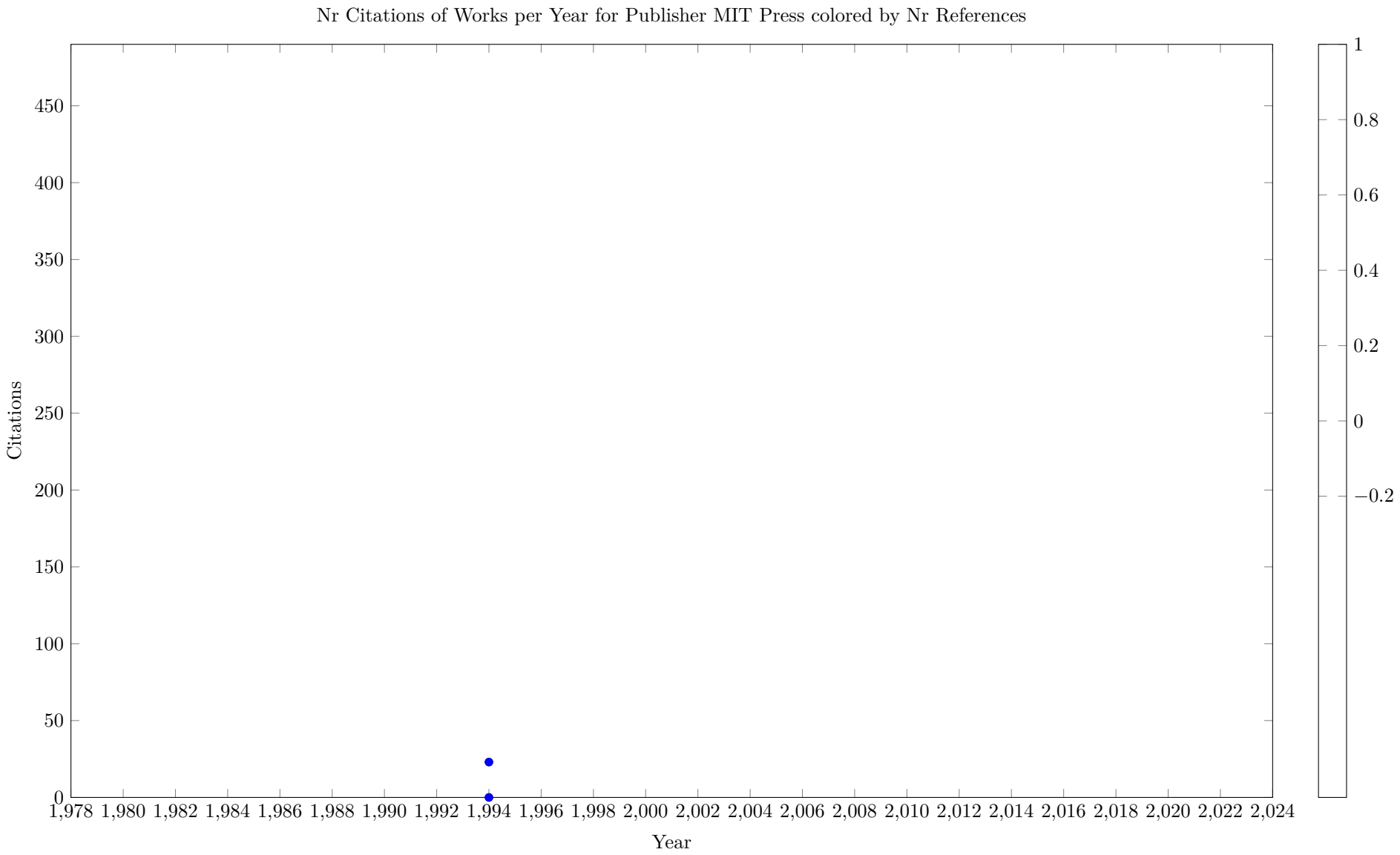
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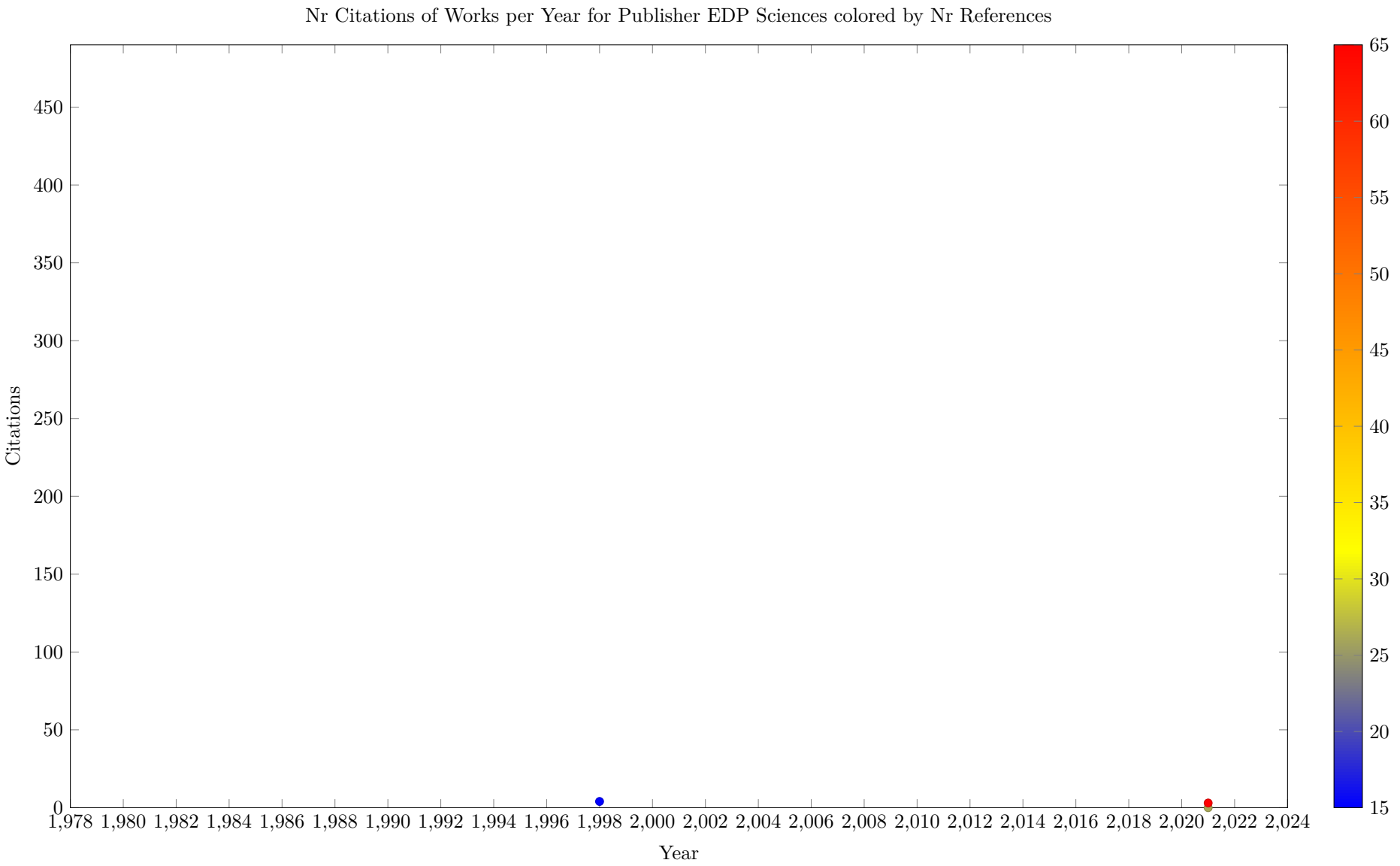
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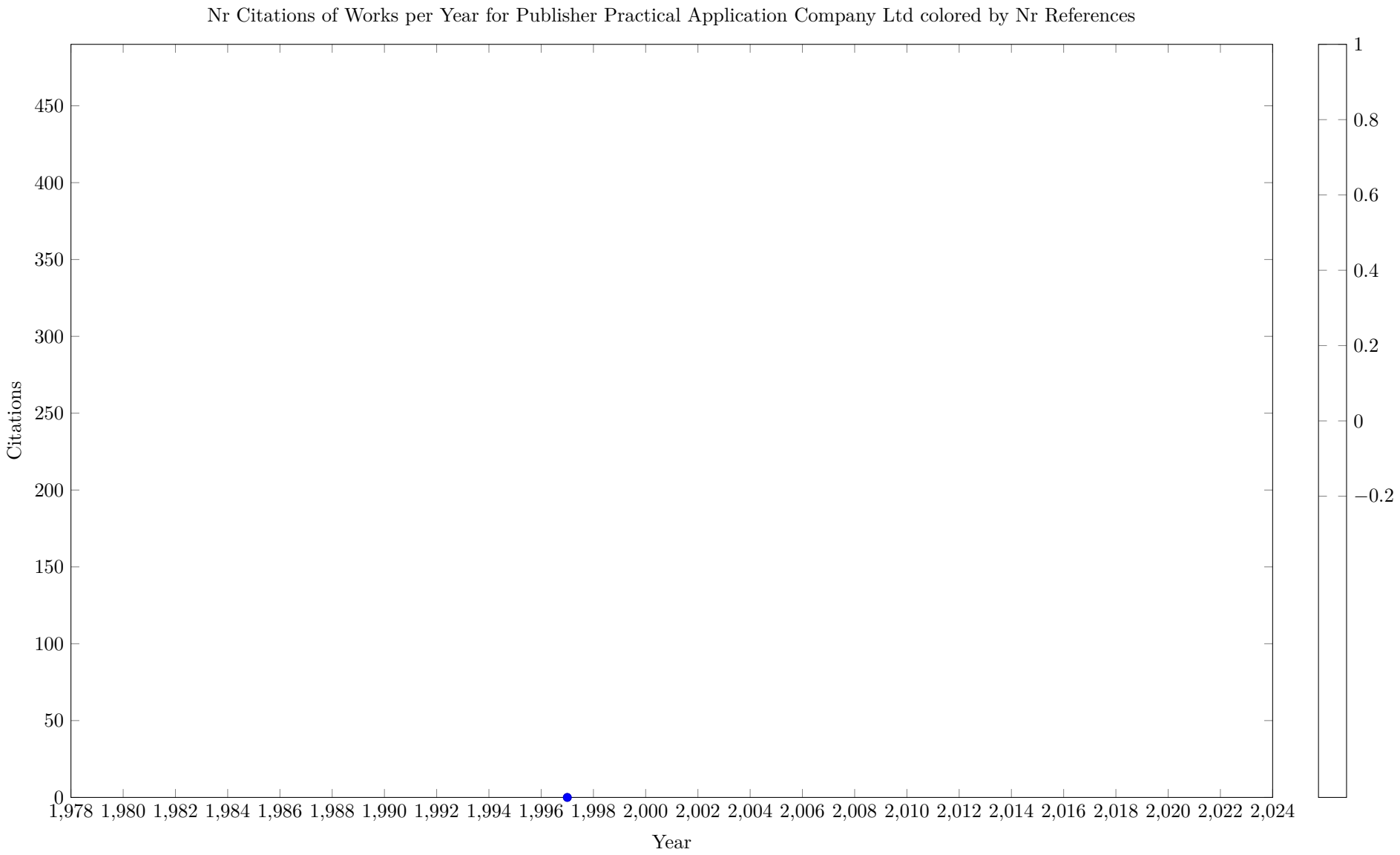
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