

# Publication Report

Helmut Simonis and Cemalettin Öztürk

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## 1 Introduction

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

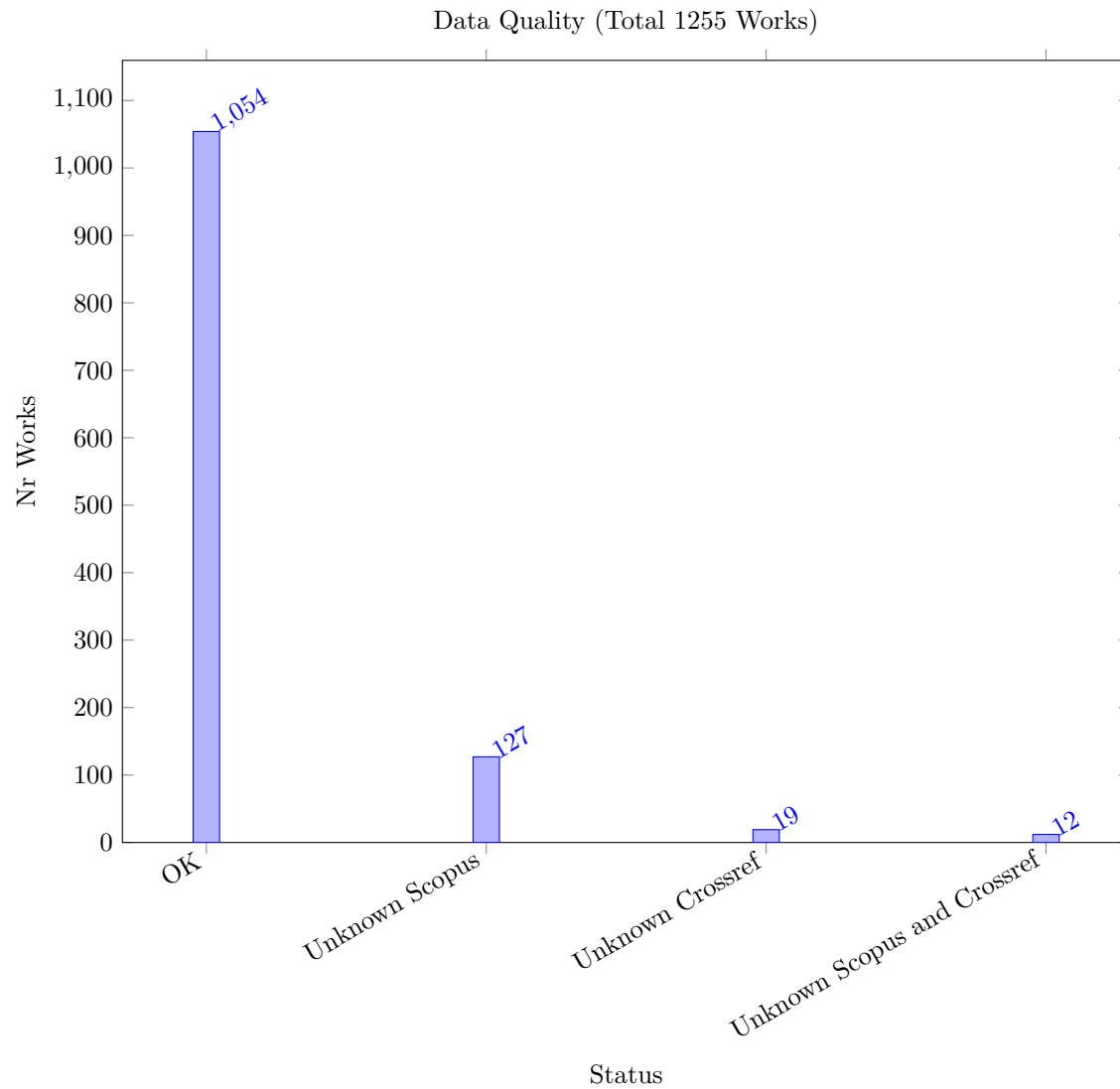


Table 1: Works Unknown to Crossref and Scopus

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

Table 2: Works Unknown to Crossref

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

Table 3: Works Unknown to Scopus

Key	DOI	Source Group	Year	Nr Citations	Crossref Citations	Scopus Citations	WoS Citations	Range Citations	Range Percentage
Euler2024	10.1007/978-3-031-60597-0_17	OtherConf	2024	0	0	0	null	0	NaN
Barral2024	10.1007/978-3-031-60597-0_3	OtherConf	2024	0	0	0	null	0	NaN
Thomas2024	10.1007/978-3-031-60599-4_13	OtherConf	2024	0	0	0	null	0	NaN

Key	DOI	Source Group	Year	Nr Citations	Crossref Citations	Scopus Citations	WoS Citations	Range Citations	Range Percentage
Houten2024	10.1007/978-3-031-60599-4_15	OtherConf	2024	0	0	0	null	0	NaN
Infantes2024	10.1007/978-3-031-60597-0_21	OtherConf	2024	0	0	0	null	0	NaN
Caballero23	10.1007/s10601-023-09357-0	Constraints	2023	0	0	0	null	0	NaN
NaderiBZ23	10.2139/ssrn.4494381	Preprint	2023	0	0	0	null	0	NaN
GunerGSKD23	10.1080/00207543.2023.2226772	OtherJournal	2023	0	3	0	null	3	100.00
IklassovMR023	10.24963/ijcai.2023/594	IJCAI	2023	0	0	0	null	0	NaN
Lyons2023	10.3390/analytics2030036	OtherJournal	2023	0	0	0	null	0	NaN
Bley2023	10.1007/978-3-031-24907-5_68	OtherConf	2023	0	0	0	null	0	NaN
Akan2023	10.33714/masteb.1324266	OtherJournal	2023	0	0	0	null	0	NaN
Abreu2023	10.1007/978-3-031-36121-0_9	OtherConf	2023	0	0	0	null	0	NaN
HebrardALLCMR22	10.24963/ijcai.2022/643	IJCAI	2022	0	0	0	null	0	NaN
NaderiBZ22	10.2139/ssrn.4140716	Preprint	2022	0	0	0	null	0	NaN
JuvinHL22	10.2139/ssrn.4068164	Preprint	2022	0	0	0	null	0	NaN
NaderiR22	10.1287/ijoo.2021.0056	ORJournal	2022	5	7	0	null	7	100.00
KotaryFH22	10.1609/aaai.v36i7.20685	AAAI	2022	0	2	0	null	2	100.00
Ouellet2022	10.1609/aaai.v36i4.20296	AAAI	2022	1	0	0	null	1	100.00
QinWSLS21	10.1109/tase.2019.2947398	OtherJournal	2021	12	19	0	null	19	100.00
GeibingerMM21	10.1609/aaai.v35i7.16789	AAAI	2021	0	1	0	null	1	100.00
KletzanderMH21	10.1609/aaai.v35i13.17408	AAAI	2021	2	2	0	null	2	100.00
Pinarbasi21	10.1080/0305215x.2021.1921171	OtherJournal	2021	3	6	0	null	6	100.00
Strak2021	10.5937/tehnika2102239s	OtherJournal	2021	0	0	0	null	0	NaN
Eiter2021	10.24963/kr.2021/27	OtherConf	2021	6	7	0	null	7	100.00
GodetLHS20	10.1609/aaai.v34i02.5510	AAAI	2020	1	1	0	null	1	100.00
FallahiaAC20	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
Bzdrya2015	10.4028/www.scientific.net/amm.791.70	OtherJournal	2015	5	5	0	null	5	100.00
FriedrichFMRSSST14	10.1007/978-3-319-28697-6_23	OtherConf	2014	3	3	0	null	3	100.00
LipovetzkyBPS14	10.1609/icaps.v24i1.13666	ICAPS	2014	5	5	0	null	5	100.00
LudwigKRBMS14	10.1609/aaai.v28i2.19030	AAAI	2014	1	1	0	null	1	100.00
ChunS14	10.1609/aaai.v28i2.19013	AAAI	2014	3	3	0	null	3	100.00

Key	DOI	Source Group	Year	Nr Citations	Crossref Citations	Scopus Citations	WoS Citations	Range Citations	Range Percentage
Silva2014	10.1590/2238-1031.jtl.v8n4a9	OtherJournal	2014	2	2	0	null	2	100.00
Levine2014	10.1609/icaps.v24i1.13672	ICAPS	2014	17	20	0	null	20	100.00
Lozano2014	10.1145/2666357.2597815	OtherJournal	2014	3	2	0	null	3	100.00
Banaszak2014	10.1515/fman-2015-0014	OtherJournal	2014	8	8	0	null	8	100.00
BonfiettiLM13	10.1609/icaps.v23i1.13608	ICAPS	2013	1	1	0	null	1	100.00
LombardiM13	10.1609/icaps.v23i1.13580	ICAPS	2013	3	0	0	null	3	100.00
TranTDB13	10.1609/icaps.v23i1.13552	ICAPS	2013	2	2	0	null	2	100.00
MalapertCGJLR13	10.1609/icaps.v23i1.13575	ICAPS	2013	0	0	0	null	0	NaN
Zoulfaghari2013	10.4018/jaec.2013040103	OtherJournal	2013	5	5	0	null	5	100.00
Guimarans2013	10.4018/978-1-4666-2461-0.ch007	Inbook	2013	1	1	0	null	1	100.00
Janosikova2013	10.26552/com.c.2013.1.39-43	OtherJournal	2013	0	0	0	null	0	NaN
Kelareva2012	10.1609/icaps.v22i1.13494	ICAPS	2012	11	14	0	null	14	100.00
BajestaniB11	10.1609/icaps.v21i1.13450	ICAPS	2011	2	2	0	null	2	100.00
Milano11	10.1002/9780470400531.eorms0473	Inbook	2011	0	0	0	null	0	NaN
Lizarralde2011	10.3917/proj.007.0089	OtherJournal	2011	1	1	0	null	1	100.00
Laborie2011	10.1007/978-3-642-23592-4_6	Inbook	2011	2	2	0	null	2	100.00
Baptiste09	10.1007/978-3-642-04244-7_1	CP	2009	0	0	0	null	0	NaN
MonetteDH09	10.1609/icaps.v19i1.13356	ICAPS	2009	9	10	0	null	10	100.00
Lorterapong2009	10.4203/ccp.74.8	OtherConf	2009	2	2	0	null	2	100.00
MercierH08	10.1287/ijoc.1070.0226	InformaticsJC	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	InformaticsJC	2002	14	14	0	null	14	100.00
Hooker02	10.1287/ijoc.14.4.295.2828	InformaticsJC	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
Henzo1	10.1287/opre.49.1.163.11193	ORJournal	2001	65	68	0	null	68	100.00

Key	DOI	Source Group	Year	Nr Citations	Crossref Citations	Scopus Citations	WoS Citations	Range Citations	Range Percentage
Rgin2001	10.1090/dimacs/057/07	Inbook	2001	28	29	0	null	29	100.00
Baptiste2001	10.1007/978-1-4615-1479-4_2	Inbook	2001	1	1	0	null	1	100.00
LopezAKYG00	10.1016/s0947-3580(00)71114-9	OtherJournal	2000	0	0	0	null	0	NaN
Hooker00	10.1002/9781118033036	Book	2000	185	186	0	null	186	100.00
Simonis99	10.1007/3-540-45406-3_6	OtherConf	1999	5	5	0	null	5	100.00
DorndorfPH99	10.1007/978-3-642-58409-1_35	OtherConf	1999	0	0	0	null	0	NaN
DorndorfHP99	10.1007/978-1-4615-5533-9_10	Inbook	1999	18	18	0	null	18	100.00
CarlssonKA99	10.1007/3-540-49201-1_23	OtherConf	1999	1	1	0	null	1	100.00
PembertonG98	10.1090/dimacs/057/06	OtherConf	1998	26	0	0	null	26	100.00
MarriottS98	10.7551/mitpress/5625.001.0001	Background	1998	410	423	0	null	423	100.00
BeckDDF98	10.1002/(sici)1099-1425(199808)1:2<89::aid-jos9>3.0.co;2-h	OtherJournal	1998	9	8	0	null	9	100.00
Jaffar1998	10.1093/oso/9780198537922.003.0012	Inbook	1998	3	3	0	null	3	100.00
Mesghouni1997	10.1007/978-0-387-35086-8_12	Inbook	1997	2	2	0	null	2	100.00
Simonis95a	10.1007/3-540-60794-3_11	OtherConf	1995	1	1	0	null	1	100.00
Schiex1994	10.1142/s0218213094000108	OtherJournal	1994	65	66	0	null	66	100.00
Freuder1994	10.7551/mitpress/2122.001.0001	Book	1994	23	22	0	null	23	100.00
Icmeli1993	10.1108/01443579310046454	OtherJournal	1993	97	99	0	null	99	100.00
Barber1993	10.1145/152947.152955	OtherJournal	1993	13	13	0	null	13	100.00
BaptisteLV92	10.1109/robot.1992.220195	OtherConf	1992	13	11	0	null	13	100.00
Demeulemeester1992	10.1287/mnsc.38.12.1803	ORJournal	1992	380	387	0	null	387	100.00
Elmaghraby1992	10.1287/mnsc.38.9.1245	ORJournal	1992	117	121	0	null	121	100.00
CarlierP90	10.1007/bf03543071	Background	1990	112	114	0	null	114	100.00
CarlierP89	10.1287/mnsc.35.2.164	Background	1989	516	524	0	null	524	100.00
PritskerWW69	10.1287/mnsc.16.1.93	Background	1969	504	518	0	null	518	100.00

## 2.1 Range of Citation Counts

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

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

Table 4: Works with largest Range of Citation Counts

Key	DOI	Source Group	Year	Nr Citations	Crossref Citations	Scopus Citations	WoS Citations	Range Citations	Range Percentage
Demeulemeester1992	10.1287/mnsc.38.12.1803	ORJournal	1992	380	387	0	null	387	100.00
BaptistePN01	10.1007/978-1-4615-1479-4	Book	2001	296	302	0	null	302	100.00
Hooker00	10.1002/9781118033036	Book	2000	185	186	0	null	186	100.00
BensanaLV99	10.1023/a:1026488509554	Constraints	1999	99	0	150	null	150	100.00
JainM99	10.1016/s0377-2217(98)00113-1	EJOR	1999	490	503	630	null	140	22.22
Elmaghraby1992	10.1287/mnsc.38.9.1245	ORJournal	1992	117	121	0	null	121	100.00
SakkoutW00	10.1023/a:1009856210543	Constraints	2000	73	0	105	null	105	100.00

Key	DOI	Source Group	Year	Nr Citations	Crossref Citations	Scopus Citations	WoS Citations	Range Citations	Range Percentage
Icmeli1993	10.1108/01443579310046454	OtherJournal	1993	97	99	0	null	99	100.00
Smith-Miles2009	10.1145/1456650.1456656	OtherJournal	2009	298	307	395	null	97	24.56
Hooker02	10.1287/ijoc.14.4.295.2828	InformaticsJC	2002	94	93	0	null	94	100.00
MintonJPL92	10.1016/0004-3702(92)90007-k	AIJournal	1992	437	440	525	null	88	16.76
BaptistePN99	10.1023/a:1018995000688	ORJournal	1999	72	0	85	null	85	100.00
Younes2003	10.1613/jair.1136	OtherJournal	2003	54	55	128	null	74	57.81
OhrimenkoSC09	10.1007/s10601-008-9064-x	Constraints	2009	127	128	198	null	71	35.86
BlazewiczDP96	10.1016/0377-2217(95)00362-2	EJOR	1996	344	357	412	null	68	16.50
Henz01	10.1287/opre.49.1.163.11193	ORJournal	2001	65	68	0	null	68	100.00
RodosekWH99	10.1023/a:1018904229454	ORJournal	1999	53	0	67	null	67	100.00
Schiex1994	10.1142/s0218213094000108	OtherJournal	1994	65	66	0	null	66	100.00
ArtiguesDN08	10.1002/9780470611227	Book	2008	63	60	0	null	63	100.00
BaptisteP00	10.1023/a:1009822502231	Constraints	2000	46	0	62	null	62	100.00
BeldiceanuC94	10.1016/0895-7177(94)90127-9	OtherJournal	1994	167	169	223	null	56	25.11
LaborieRSV18	10.1007/s10601-018-9281-x	Constraints	2018	148	178	203	null	55	27.09
Fisher1985	10.1287/inte.15.2.10	OtherJournal	1985	462	473	517	null	55	10.64
HookerO03	10.1007/s10107-003-0375-9	OtherJournal	2003	317	333	371	null	54	14.56
MengZRZL20	10.1016/j.cie.2020.106347	OtherJournal	2020	100	133	152	null	52	34.21
Wallace96	10.1007/bf00143881	Constraints	1996	87	89	138	null	51	36.96
NuijtenP98	10.1023/a:1009687210594	OtherJournal	1998	42	0	50	null	50	100.00
EastonNT02	10.1007/978-3-540-45157-0_6	OtherConf	2002	48	50	0	null	50	100.00
Yang2000	10.1109/72.839016	OtherJournal	2000	37	0	48	null	48	100.00
Laborie03	10.1016/s0004-3702(02)00362-4	AIJournal	2003	128	129	175	null	47	26.86
HenzMT04	10.1016/s0377-2217(03)00101-2	EJOR	2004	44	47	0	null	47	100.00
BeckR03	10.1023/a:1021849405707	ORJournal	2003	29	0	45	null	45	100.00
AchterbergBKW08	10.1007/978-3-540-68155-7_4	CPAIOR	2008	80	80	125	null	45	36.00
JainG01	10.1287/ijoc.13.4.258.9733	InformaticsJC	2001	279	284	321	null	42	13.08
Zhu2006	10.1287/ijoc.1040.0121	InformaticsJC	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
HarjunkskiMBC14	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	InformaticsJC	2008	32	33	0	null	33	100.00
PerronSF04	10.1007/978-3-540-30201-8_35	CP	2004	34	34	67	null	33	49.25
SchildW00	10.1023/a:1009804226473	Constraints	2000	23	0	32	null	32	100.00
CorreaLR07	10.1016/j.cor.2005.07.004	ORJournal	2007	106	114	137	null	31	22.63
LiW08	10.1007/s10951-008-0079-3	OtherJournal	2008	113	123	144	null	31	21.53
Lindauer2015	10.1613/jair.4726	OtherJournal	2015	53	58	84	null	31	36.90

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

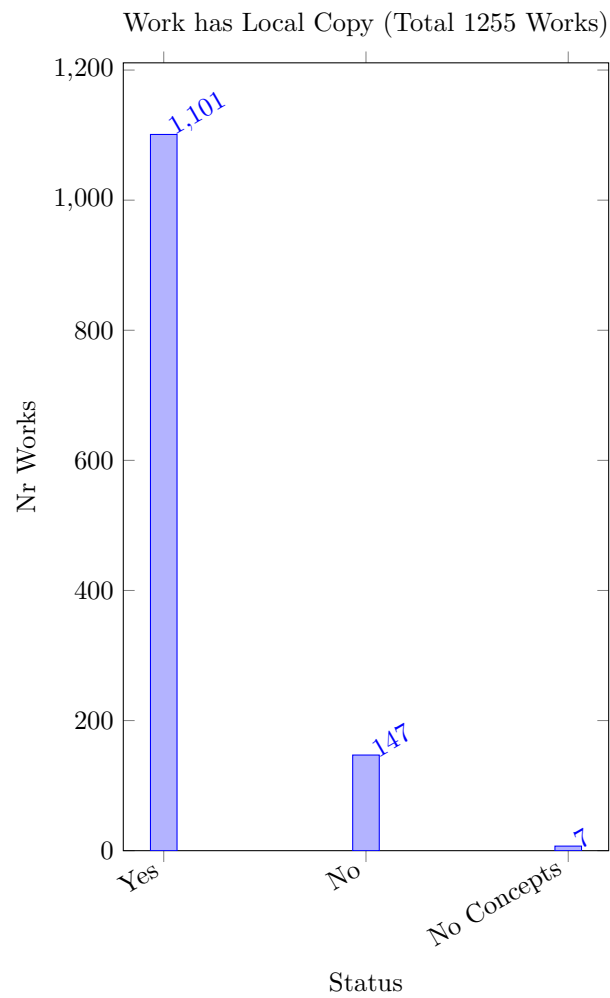
Table 5: Works with WoS Citation Counts

Key	DOI	Source Group	Year	Nr Citations	Crossref Citations	Scopus Citations	WoS Citations	Range Citations	Range Percentage
KendallKRU10	10.1016/j.cor.2009.05.013	ORJournal	2010	181	186	220	161	39	17.73
MeskensDL13	10.1016/j.dss.2012.10.019	OtherJournal	2013	102	102	116	103	14	12.07
RasmussenT07	10.1016/j.ejor.2005.10.063	EJOR	2007	60	62	71	53	11	15.49
Ribeiro12	10.1111/j.1475-3995.2011.00819.x	OtherJournal	2012	47	52	54	41	7	12.96
ElfJR03	10.1016/s0167-6377(03)00025-7	OtherJournal	2003	41	41	45	34	4	8.89
Trick03	10.1007/978-3-540-45157-0_4	OtherConf	2003	22	24	39	34	17	43.59
RasmussenT06	10.1007/11757375_15	CPAIOR	2006	10	12	19	11	9	47.37
FelizariAL09	10.1016/s1570-7946(05)80013-6	OtherConf	2009	7	7	12	1	5	41.67
MagataoAN05	10.1016/s1570-7946(05)80013-6	OtherConf	2005	7	7	12	12	5	41.67
RasmussenT09	10.1007/s10479-008-0384-4	ORJournal	2009	8	9	9	8	1	11.11
Trick11	10.1007/978-1-4419-1644-0_15	Incoll	2011	2	2	5	5	3	60.00
LiuLH19a	10.5220/0007252300290039	OtherConf	2019	3	3	4	4	1	25.00
SuCC13	10.1016/j.cie.2013.02.021	OtherJournal	2013	2	2	4	1	2	50.00
ZengM12	10.1016/j.cor.2011.10.004	ORJournal	2012	3	3	4	3	1	25.00
GhandehariK22	10.1016/j.apm.2022.01.001	OtherJournal	2022	4	4	4	3	0	0.00
BulckG22	10.1007/s10951-021-00717-3	OtherJournal	2022	2	3	3	3	1	33.33
Perron05	10.1007/11564751_67	CP	2005	1	1	2	1	1	50.00
LiuLH18	10.1007/978-3-030-05918-7_7	OtherConf	2018	2	2	1	1	1	50.00
MeskensDHG11	n/a	OtherConf	2011	0	0	0	null	0	NaN
NaqviAIAAA22	10.32604/cmc.2022.019653	OtherJournal	2022	0	0	0	0	0	NaN
KonowalenkoMM19	10.1109/tla.2019.8932340	OtherJournal	2019	0	0	0	0	0	NaN

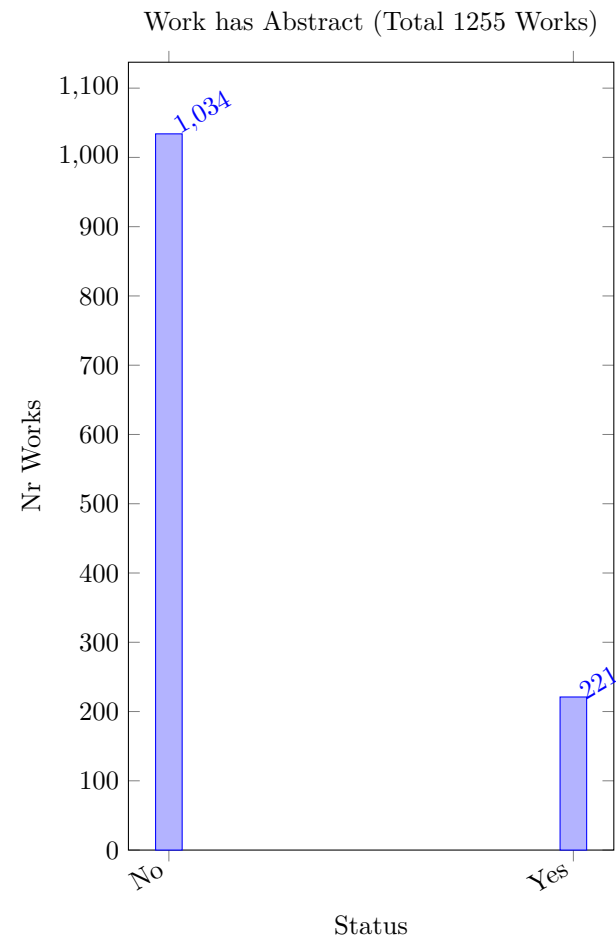
## 2.2 Local Copies

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





### 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 the 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
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2.5 Missing Publisher

Table 7: Missing Publisher

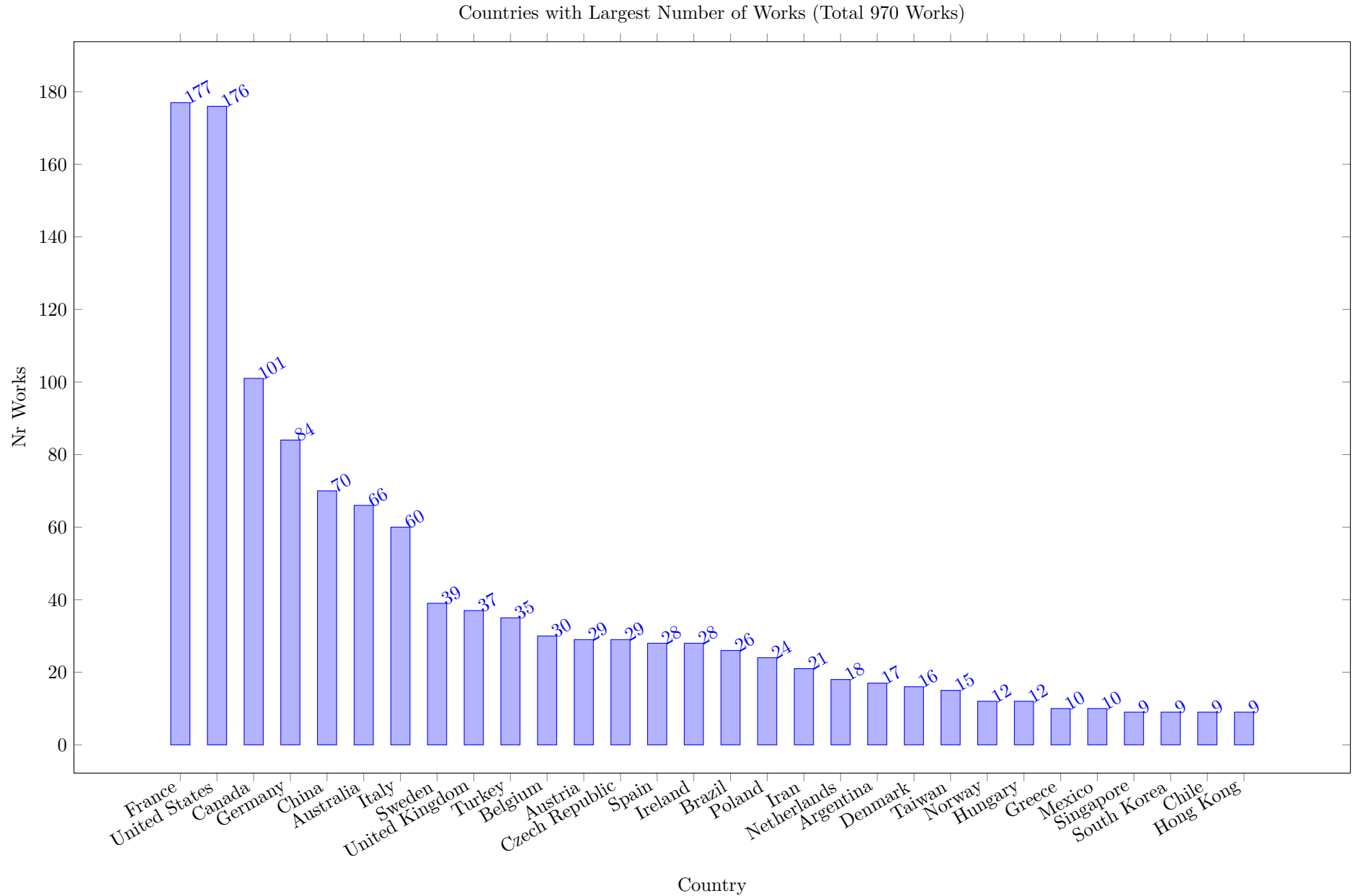
Key	DOI	Source Group	Year	Nr Citations	Crossref Citations	Scopus Citations	WoS Citations	Range Citations	Range Percentage
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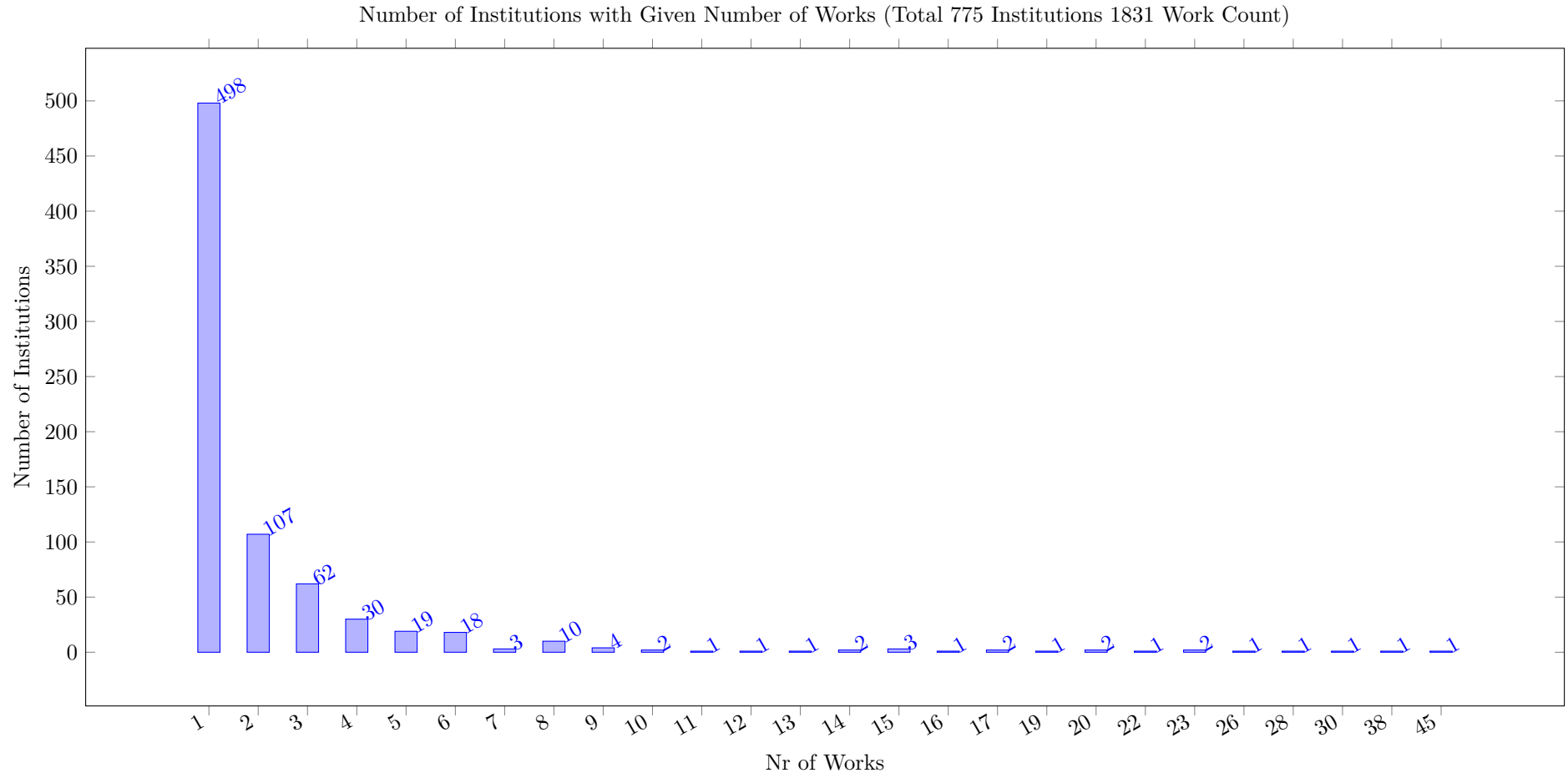
### 3 Works by Location



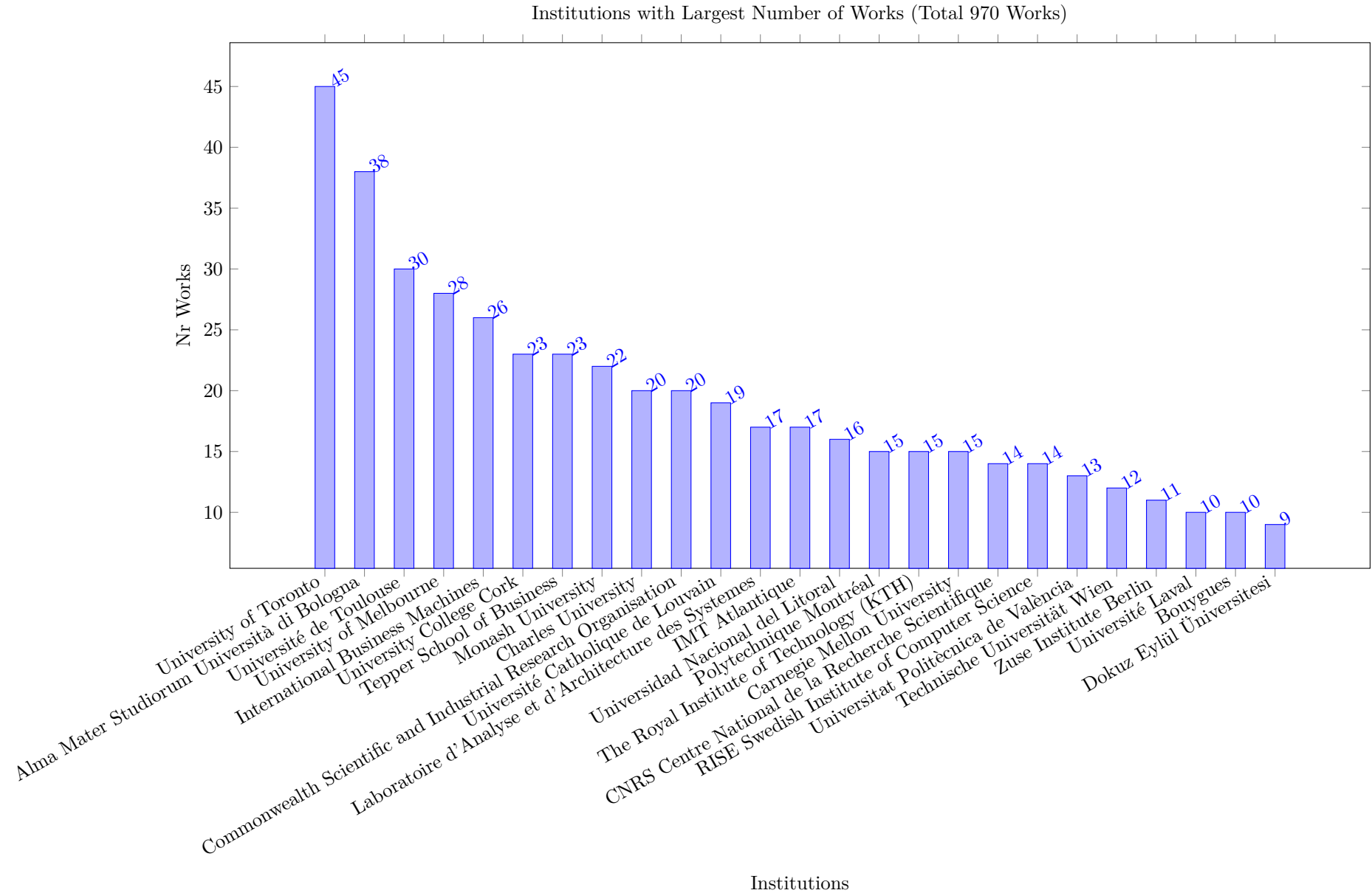
This section analyzes papers by affiliation, which is given by the Scopus data only. Only works which are covered by Scopus are included. We first present the number of papers by country. A paper is counted in this analysis (once), if at least one of the affiliations is from the country. Multiple affiliations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

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





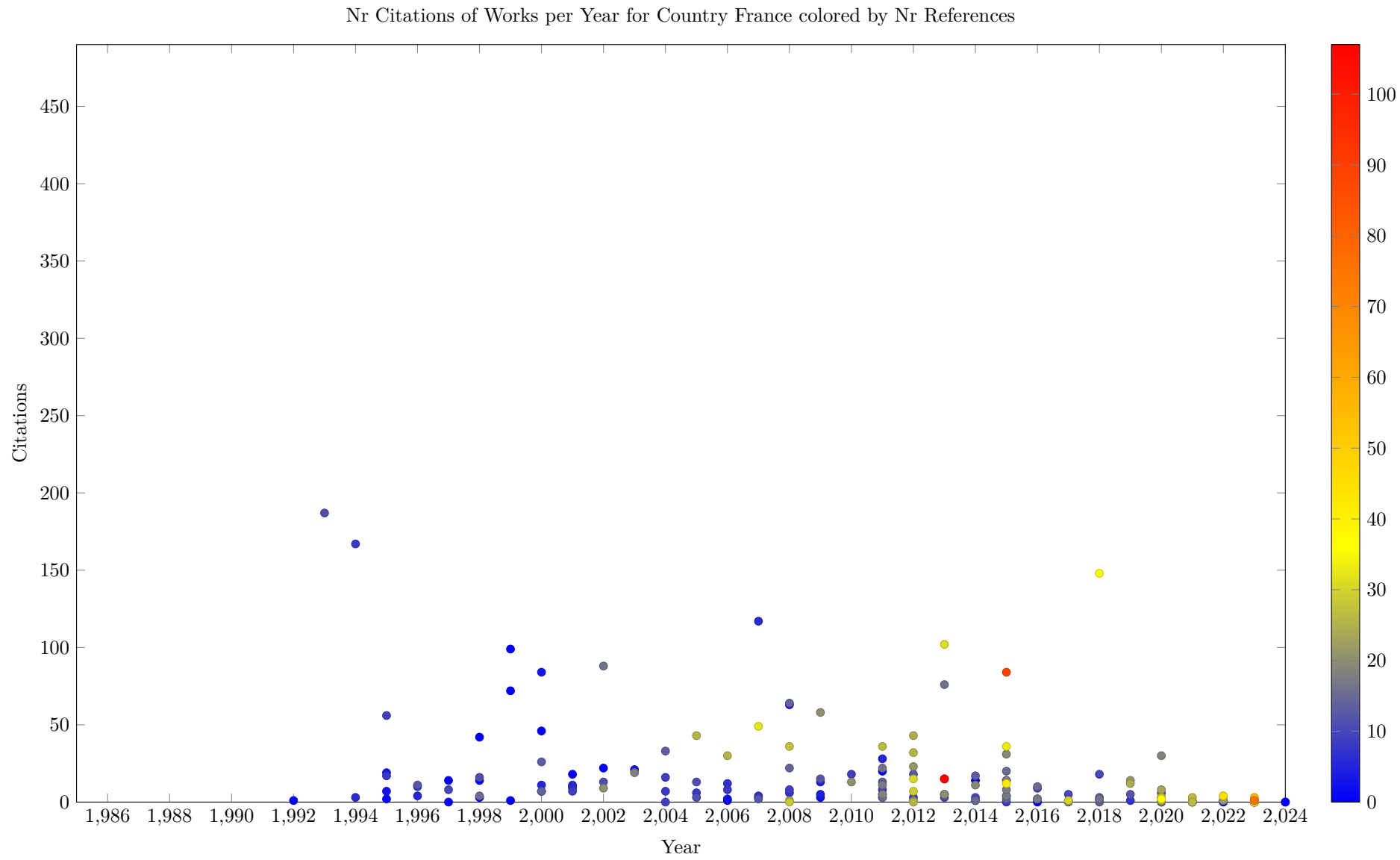
The next plot shows the number of papers associated to institutions, as stated in the Scopus affiliation. A work is counted, if at least one of the affiliations is from a given institution. Due to the format of the Scopus data, we cannot fractionally assign a paper based on the author affiliations, each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

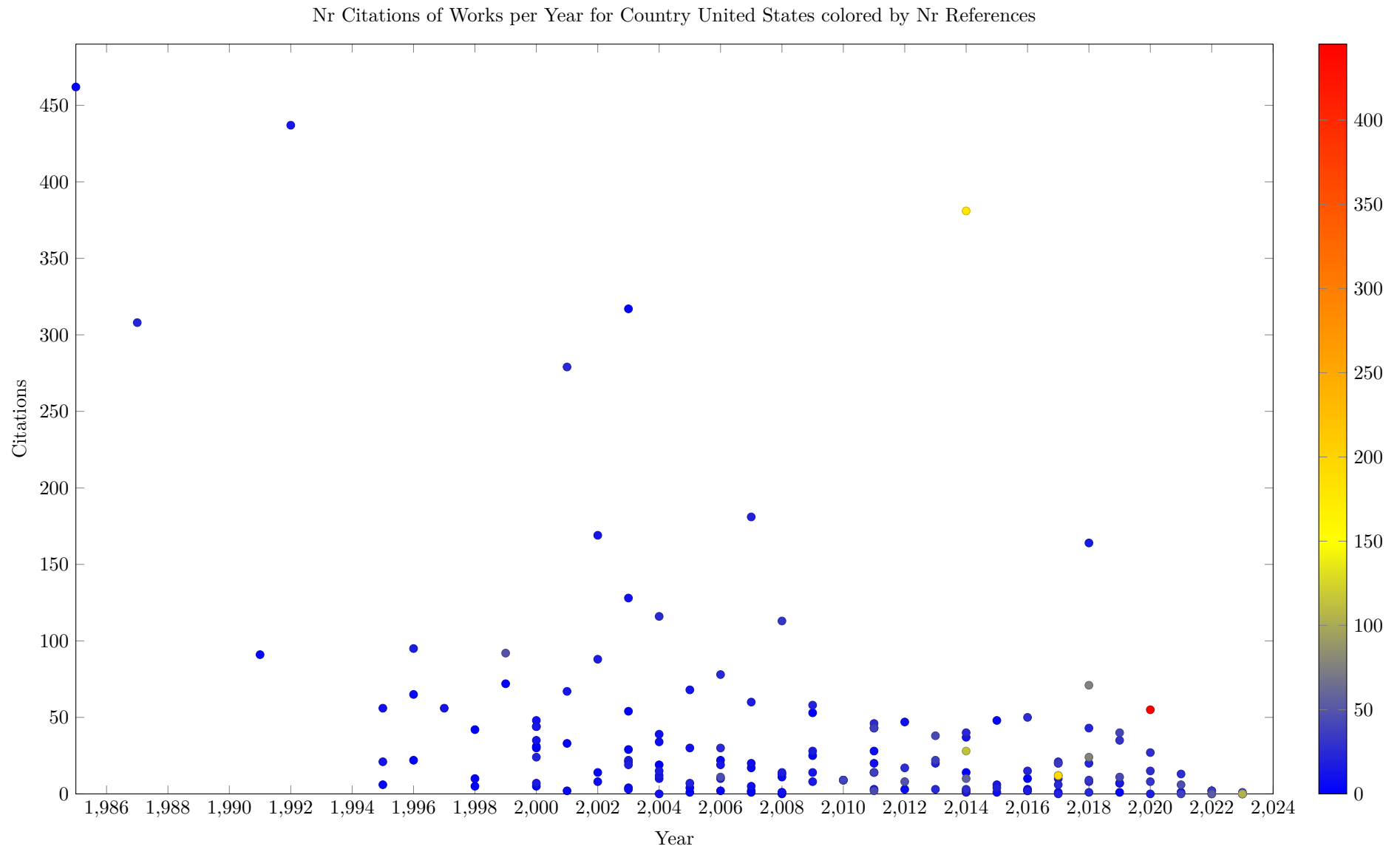


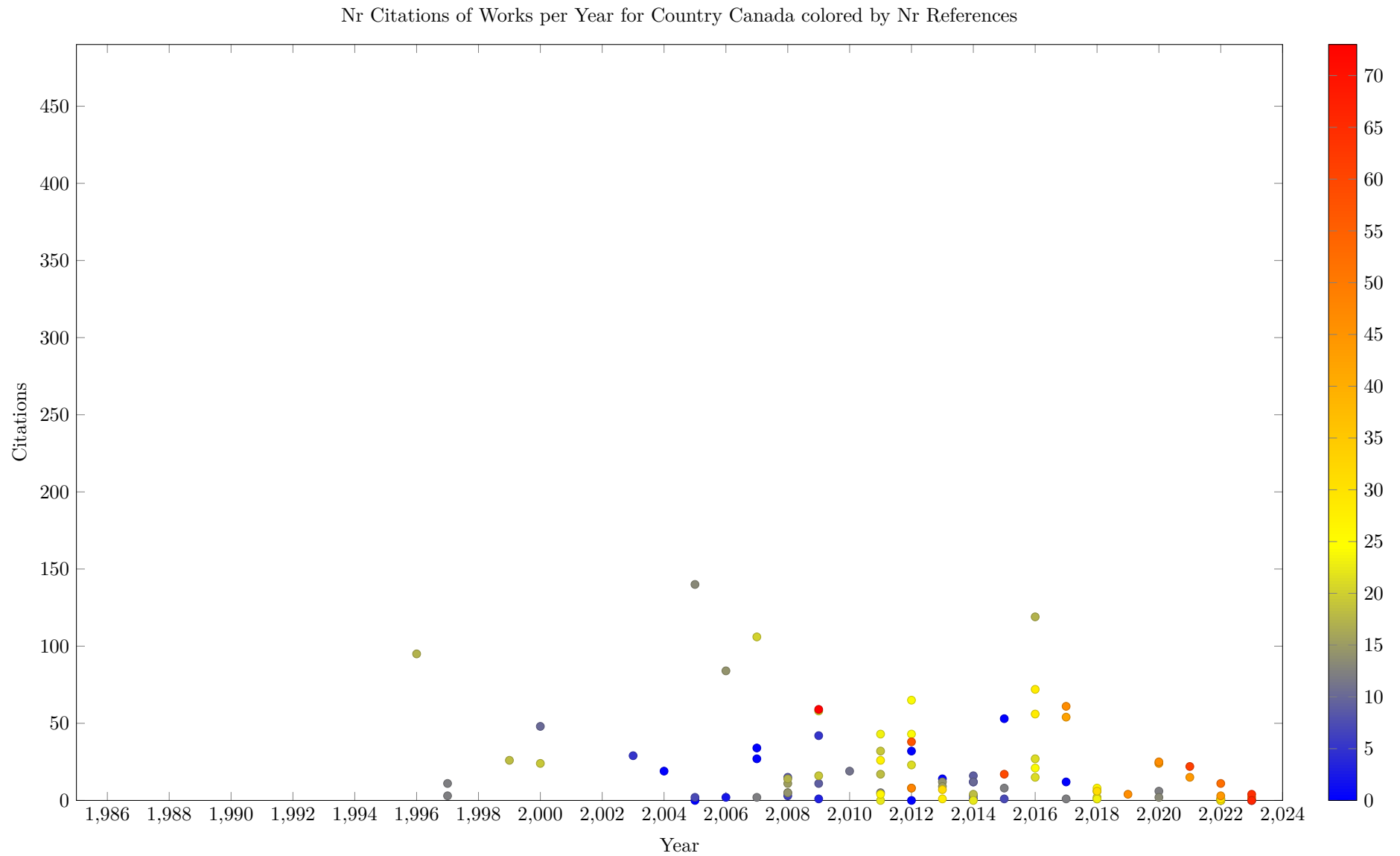
The following plots show for the top 30 countries when the works included were published, and how many citations (OpenCitation count) each paper had. The scatter plots are colored by the number of references (OpenCitation count), this help to identify surveys more easily. The plot gives an indication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

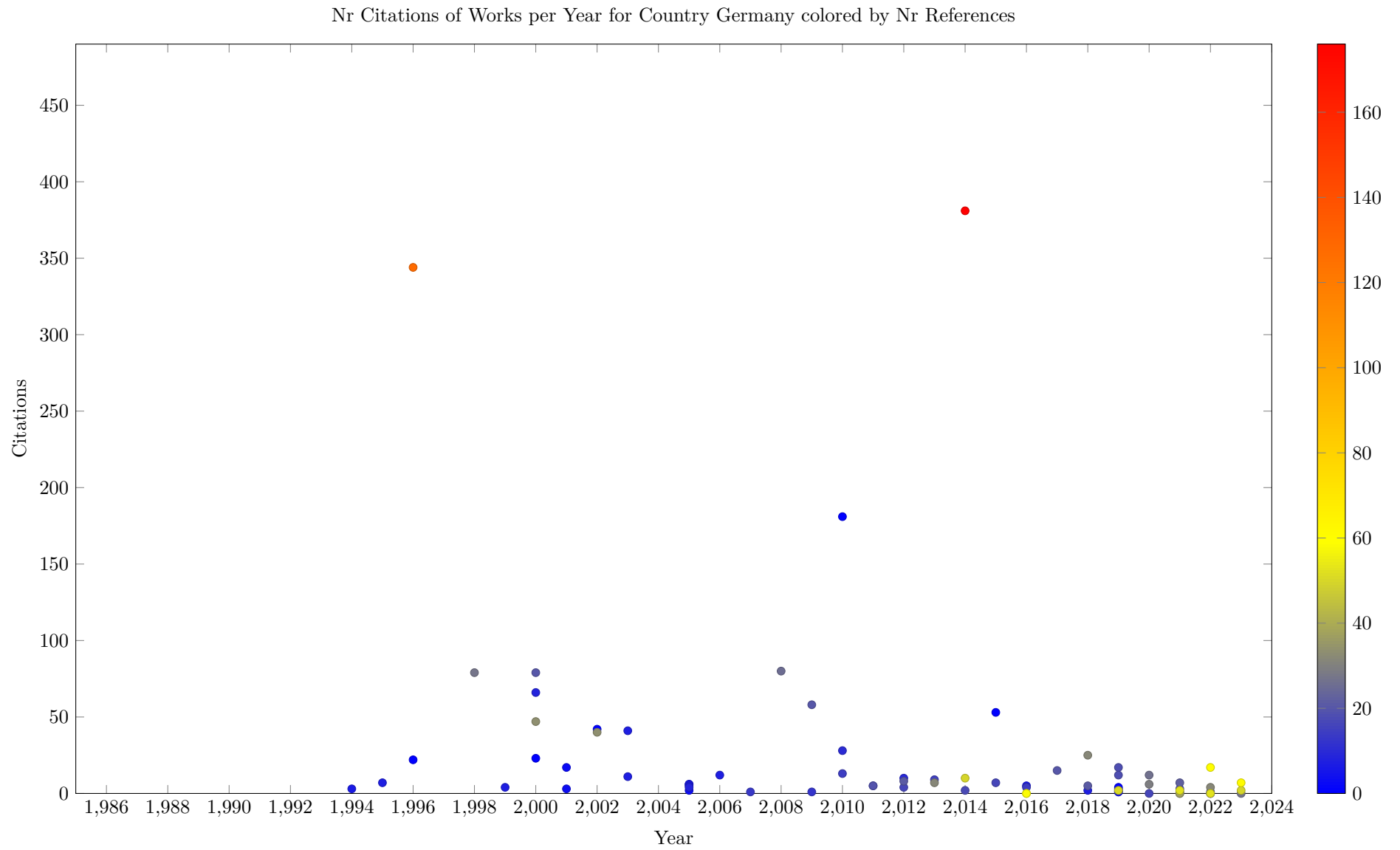
It would be nice to have tooltips on the plots, so identify specific works in the plots. This is currently not supported by the framework library used.

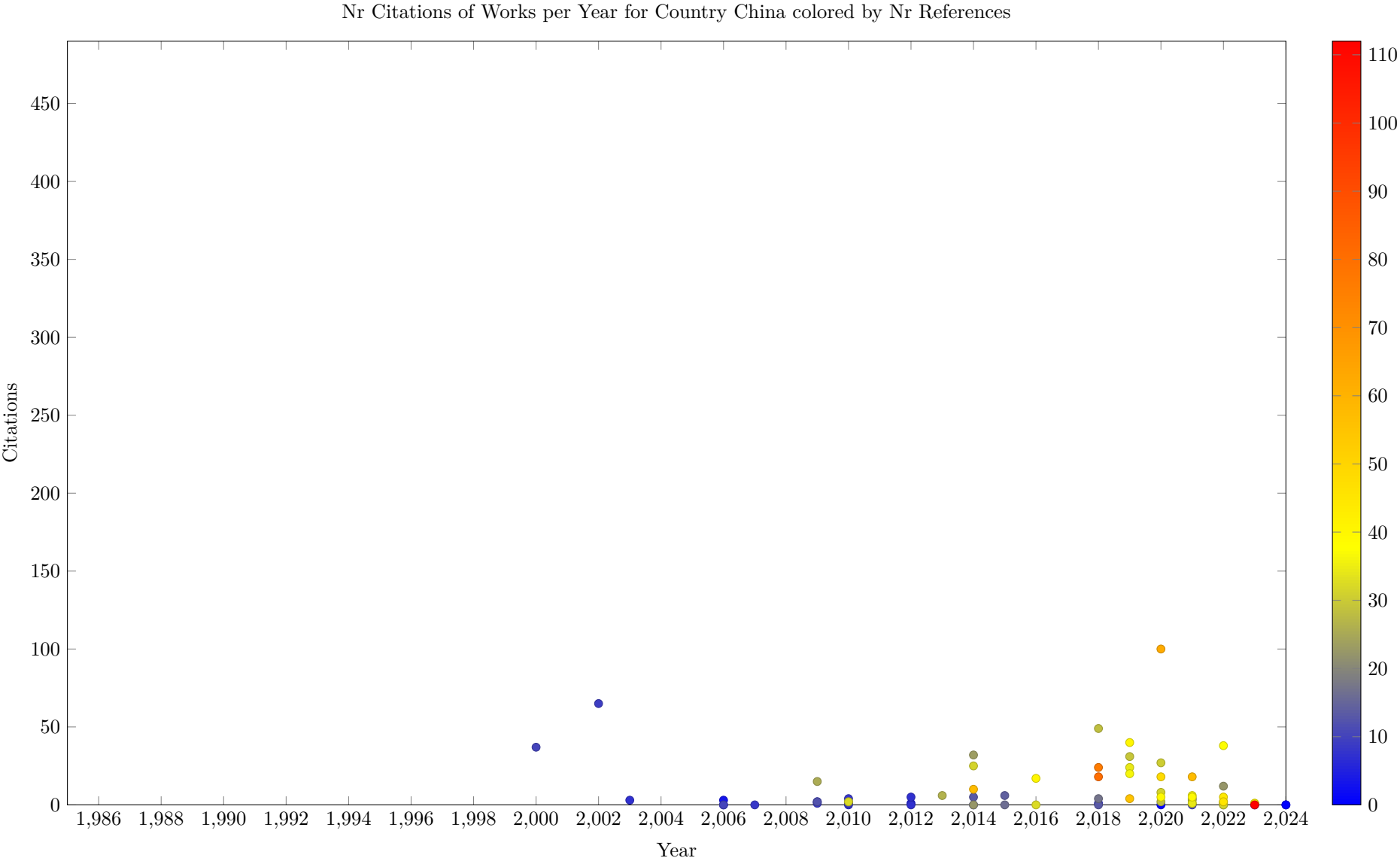


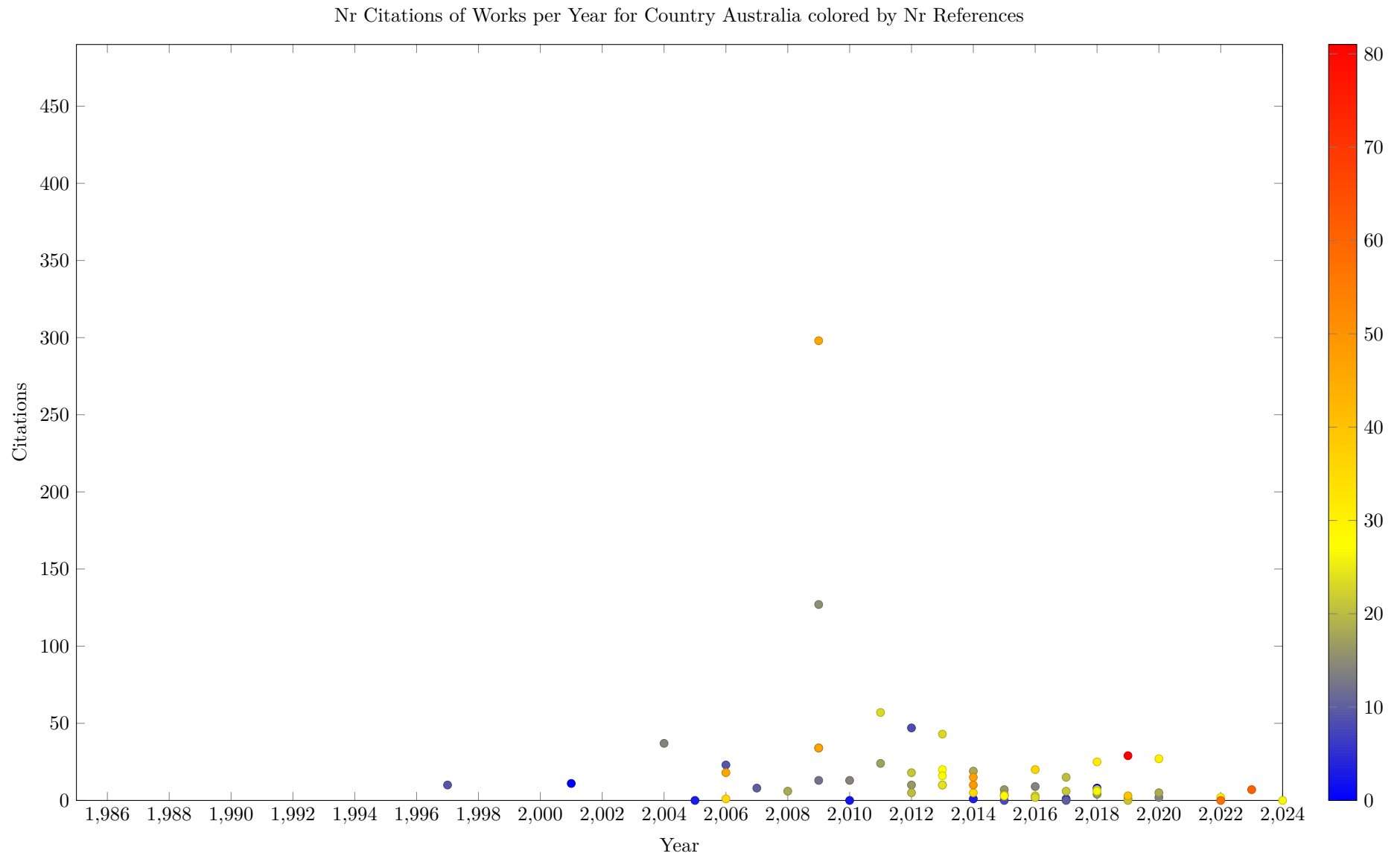


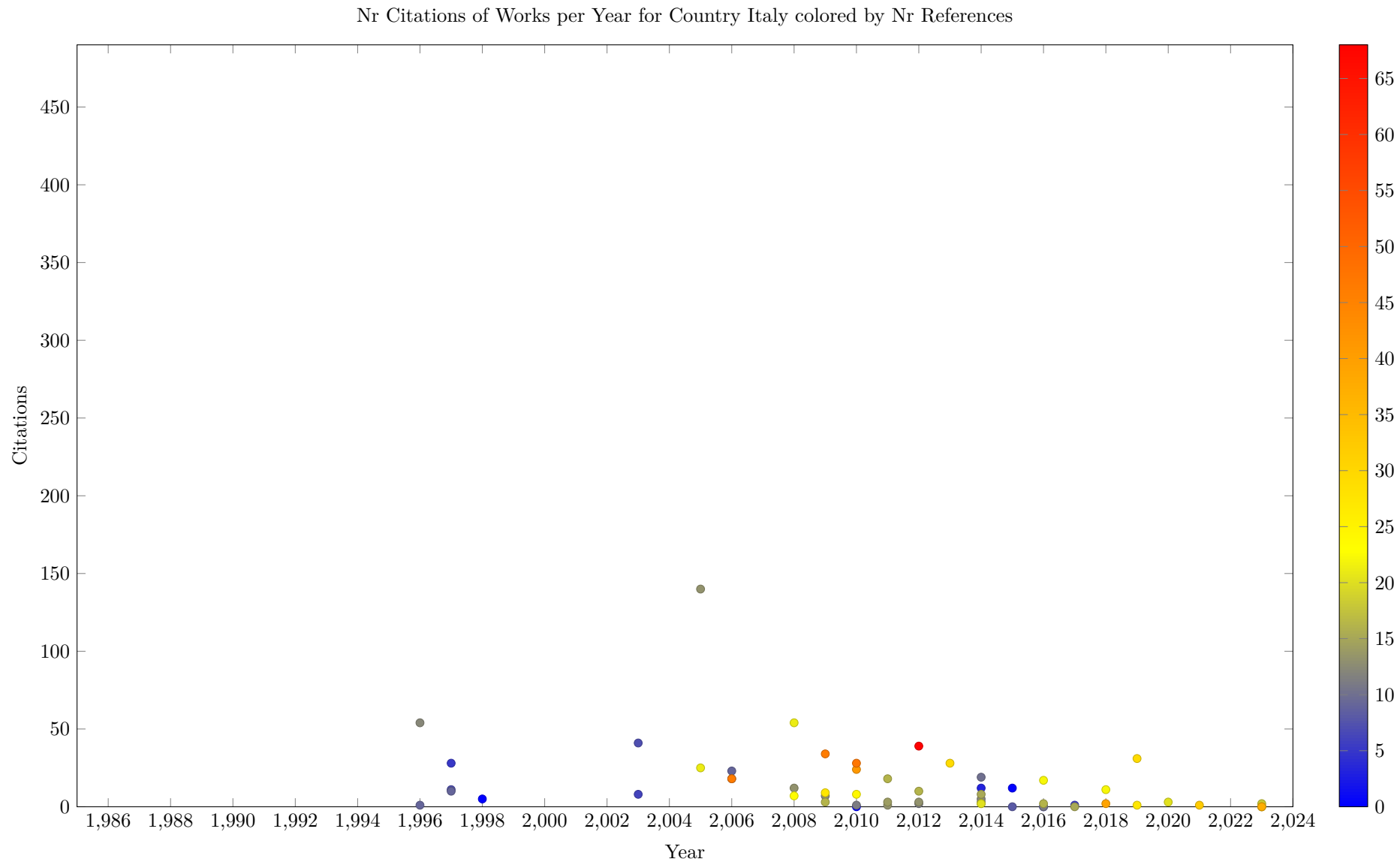


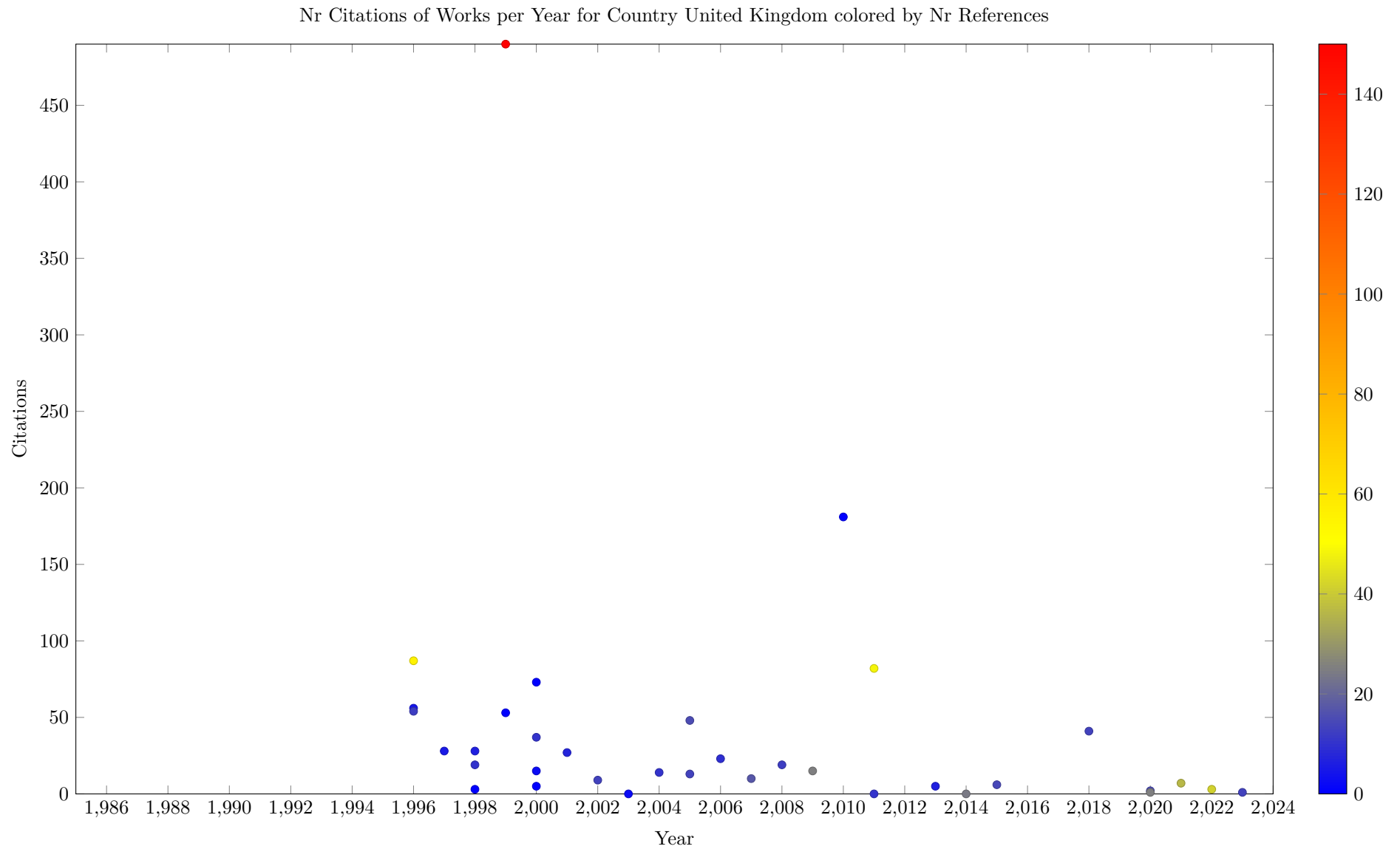




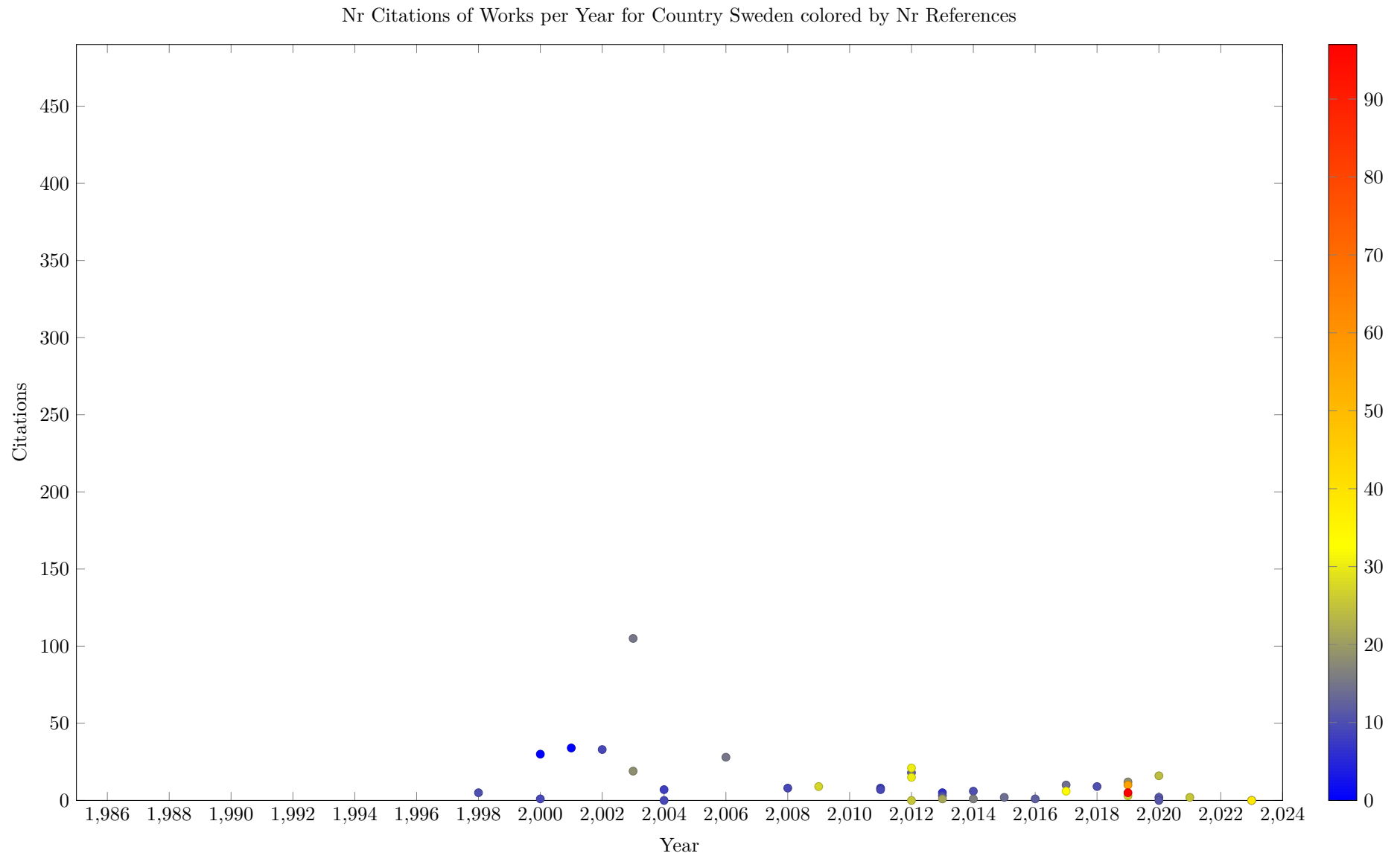


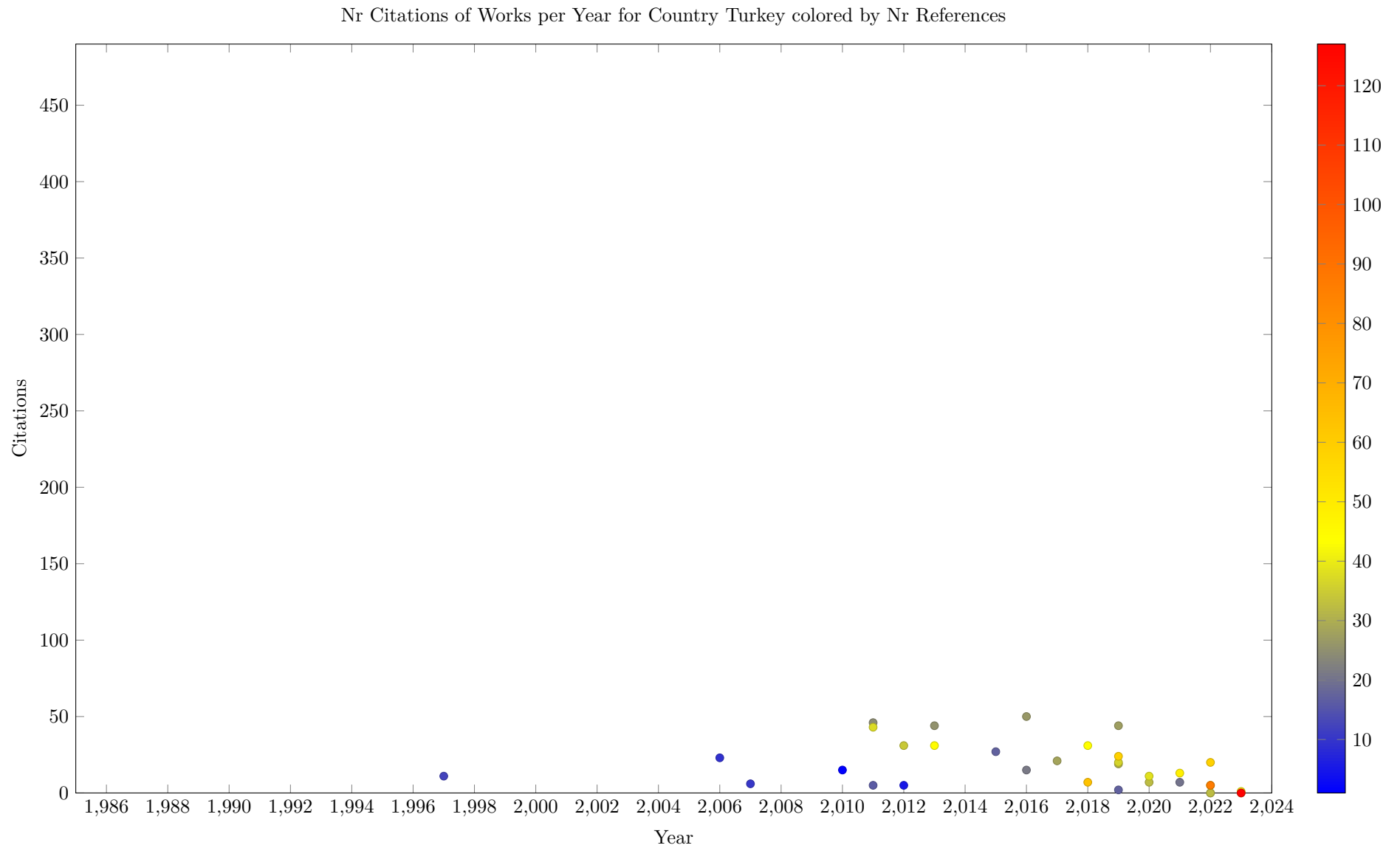


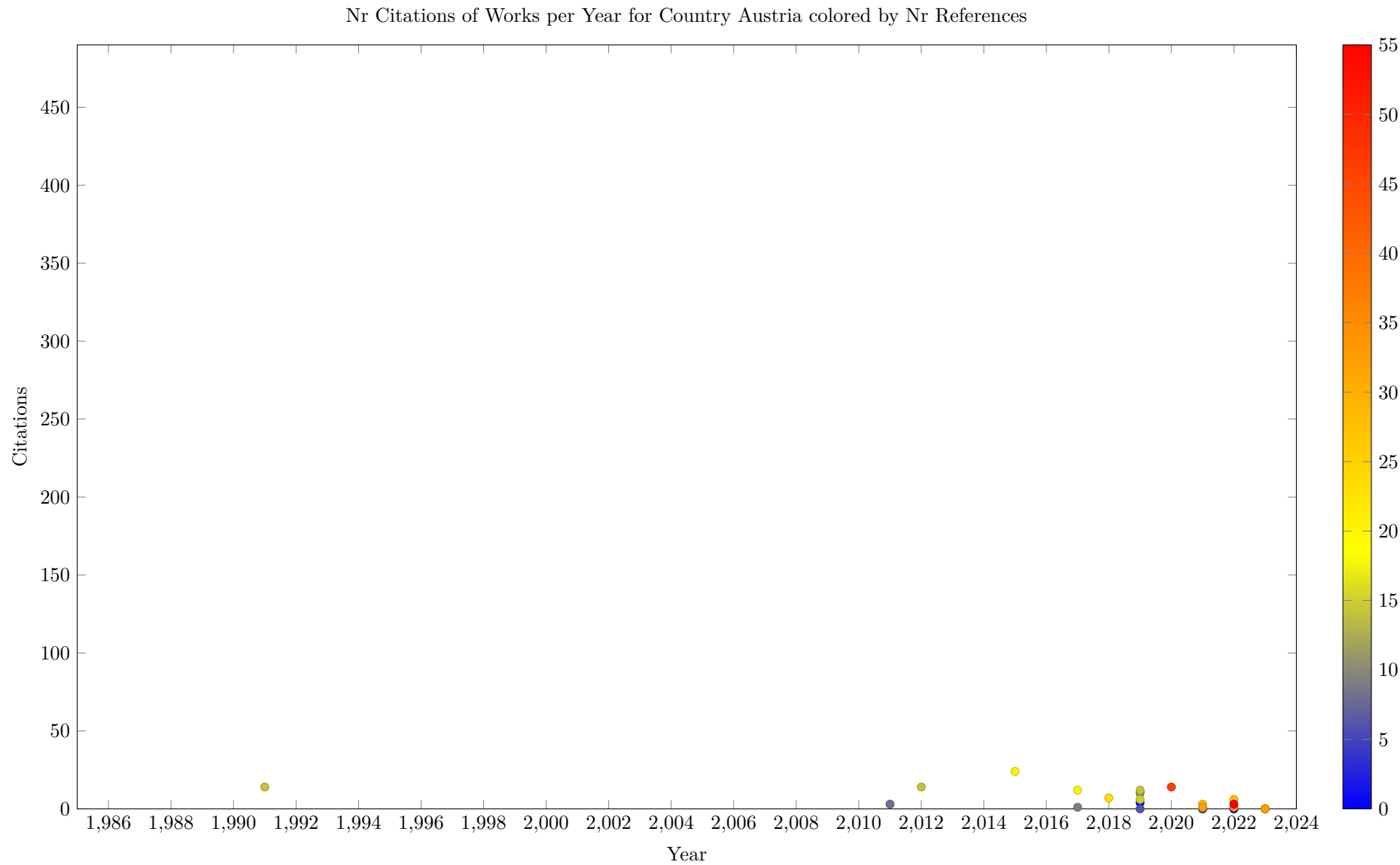


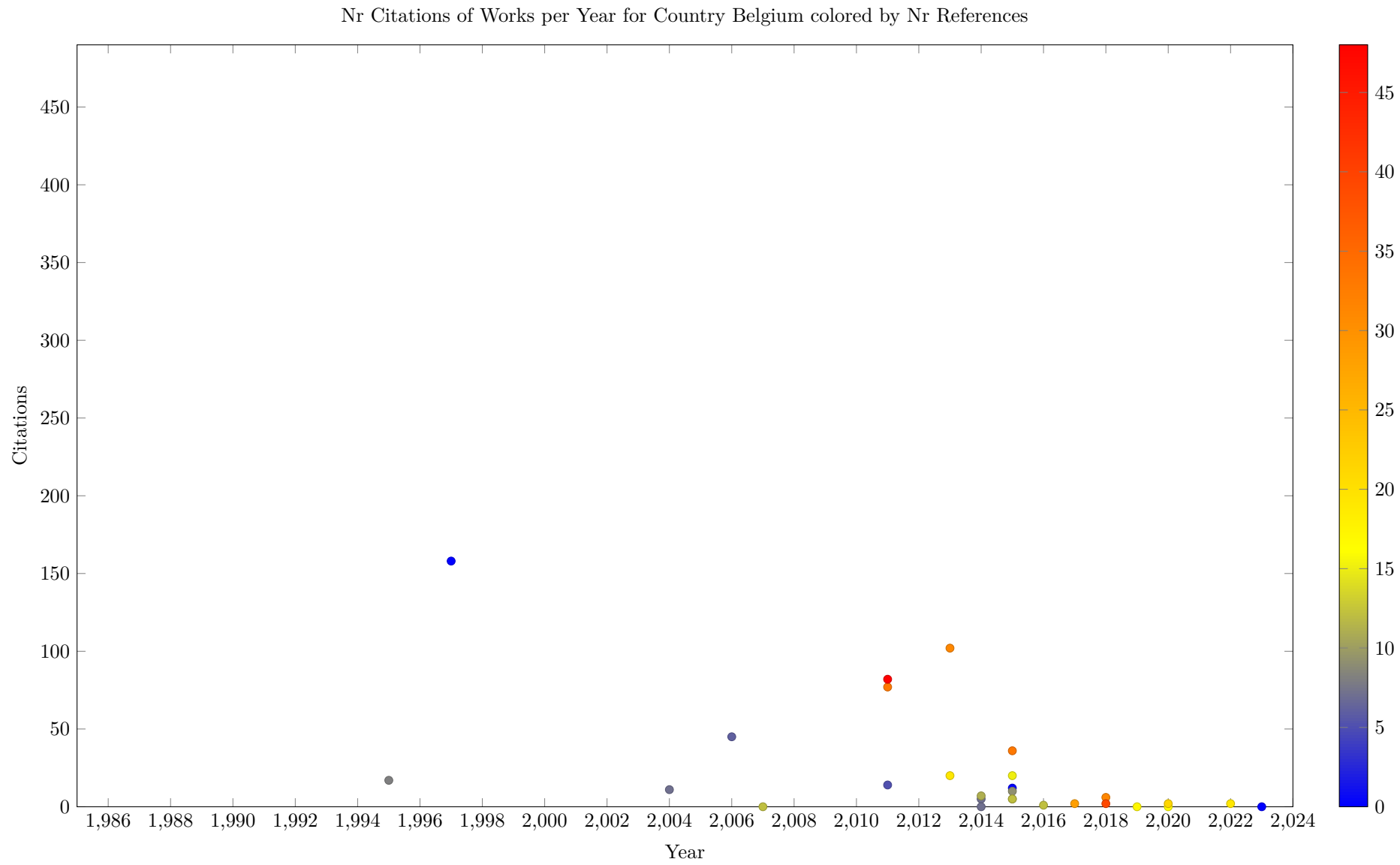


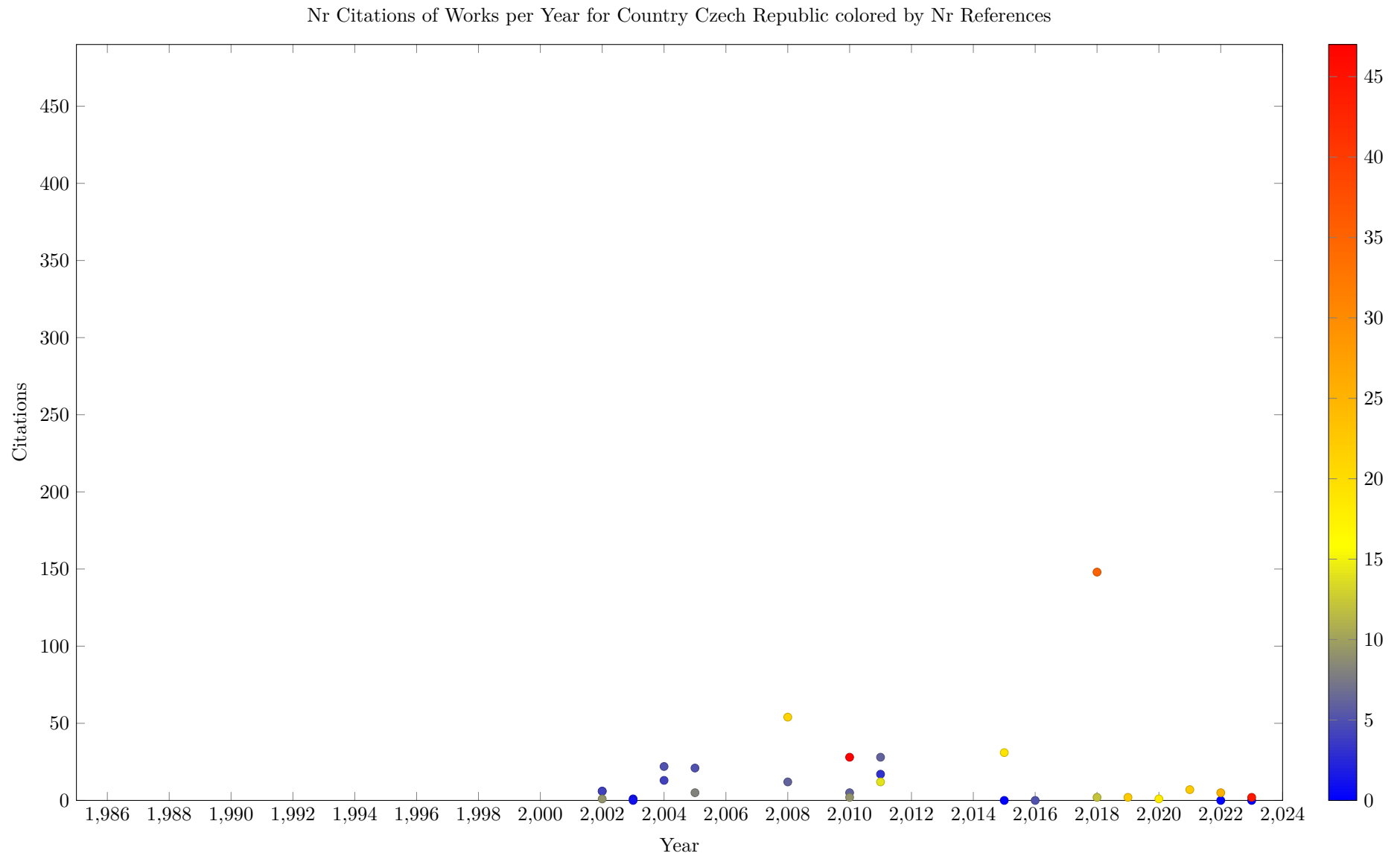


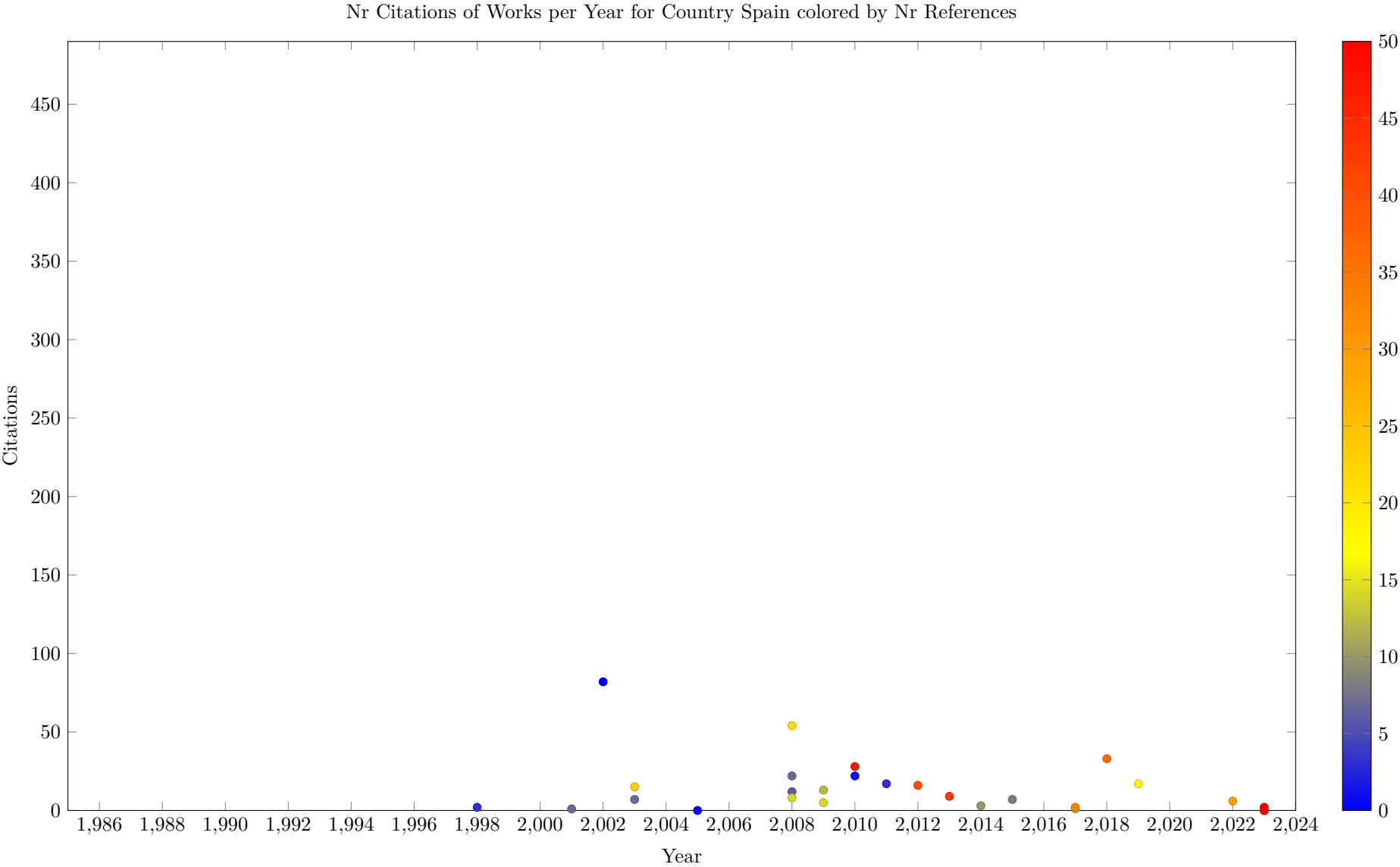


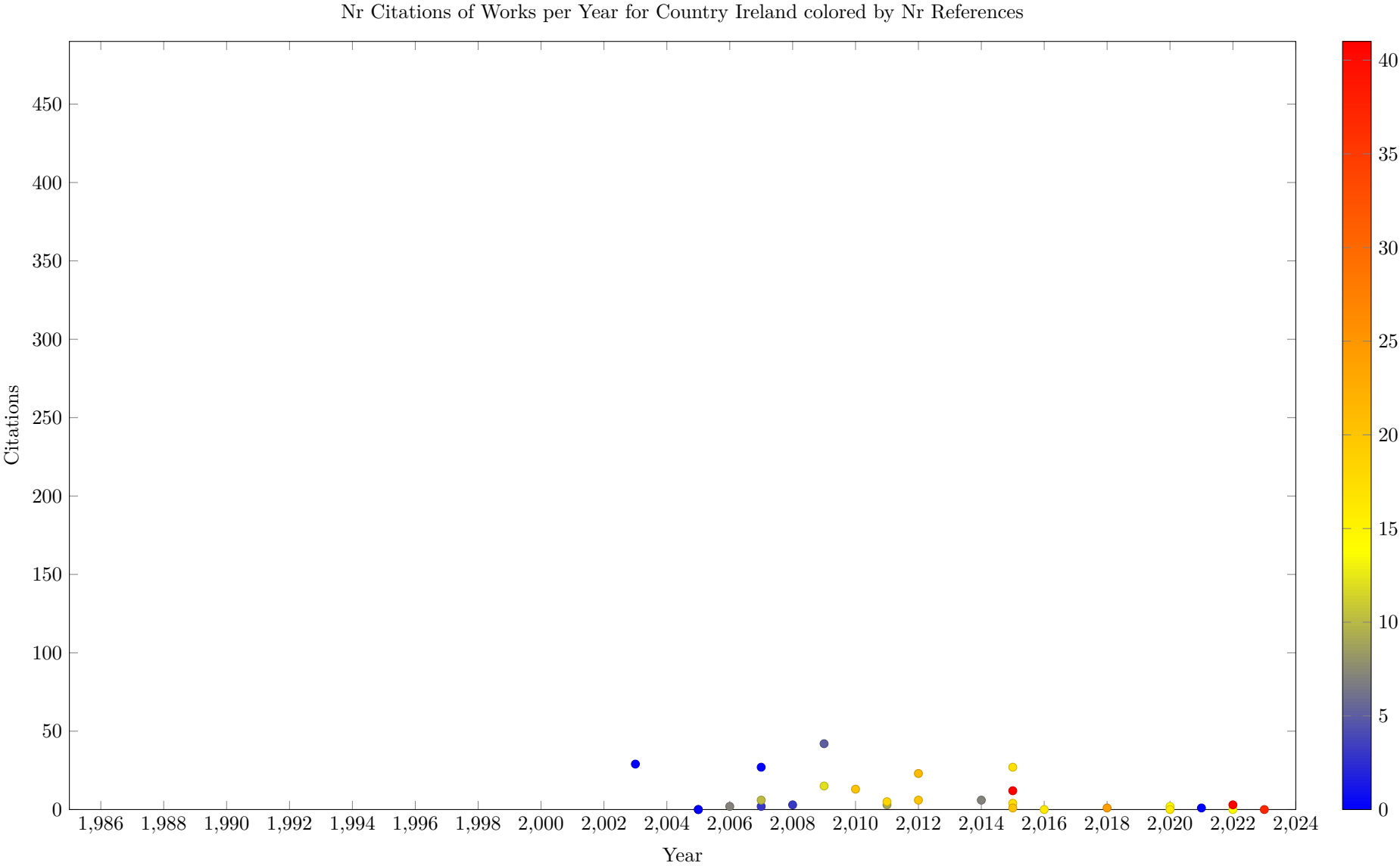


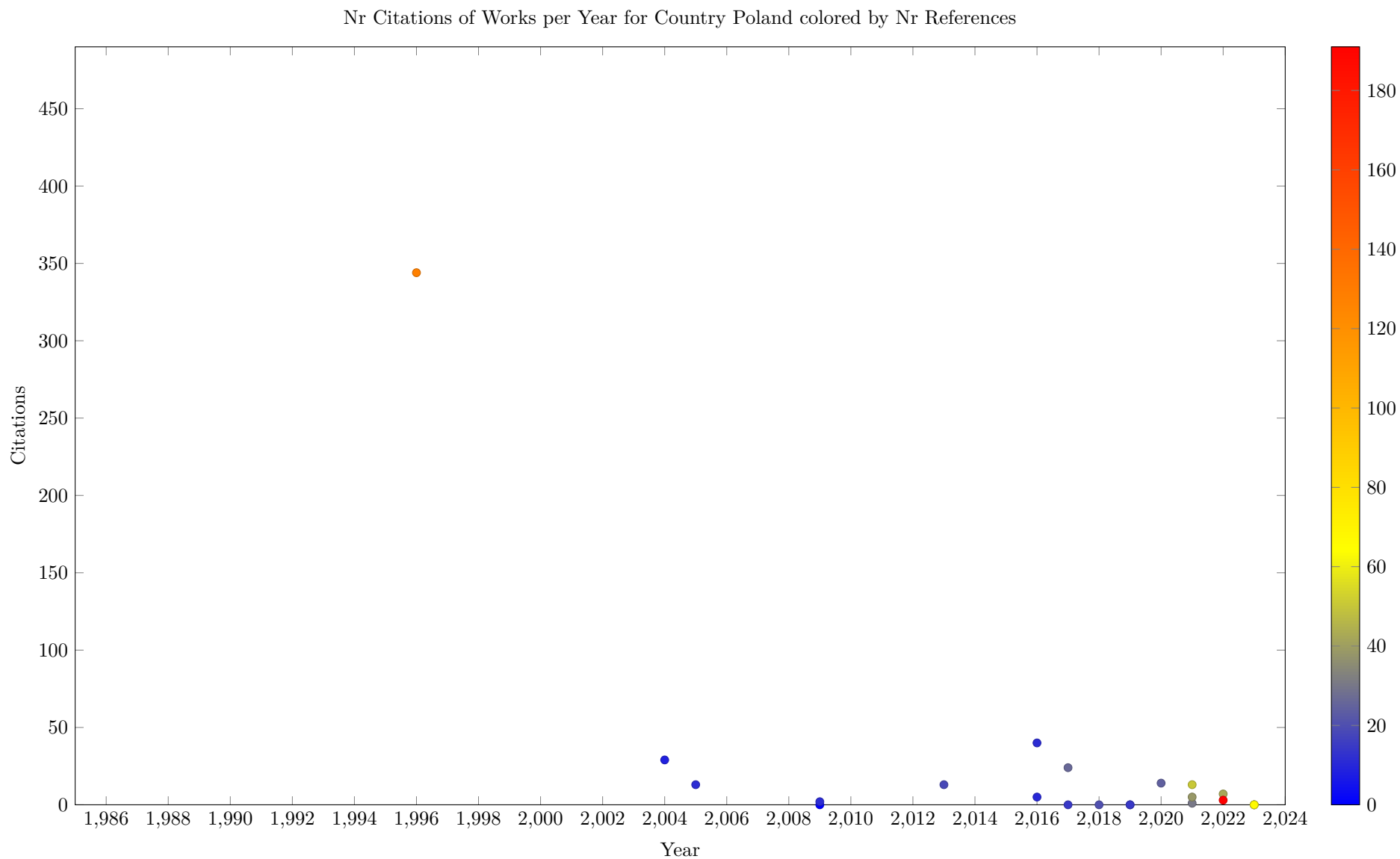




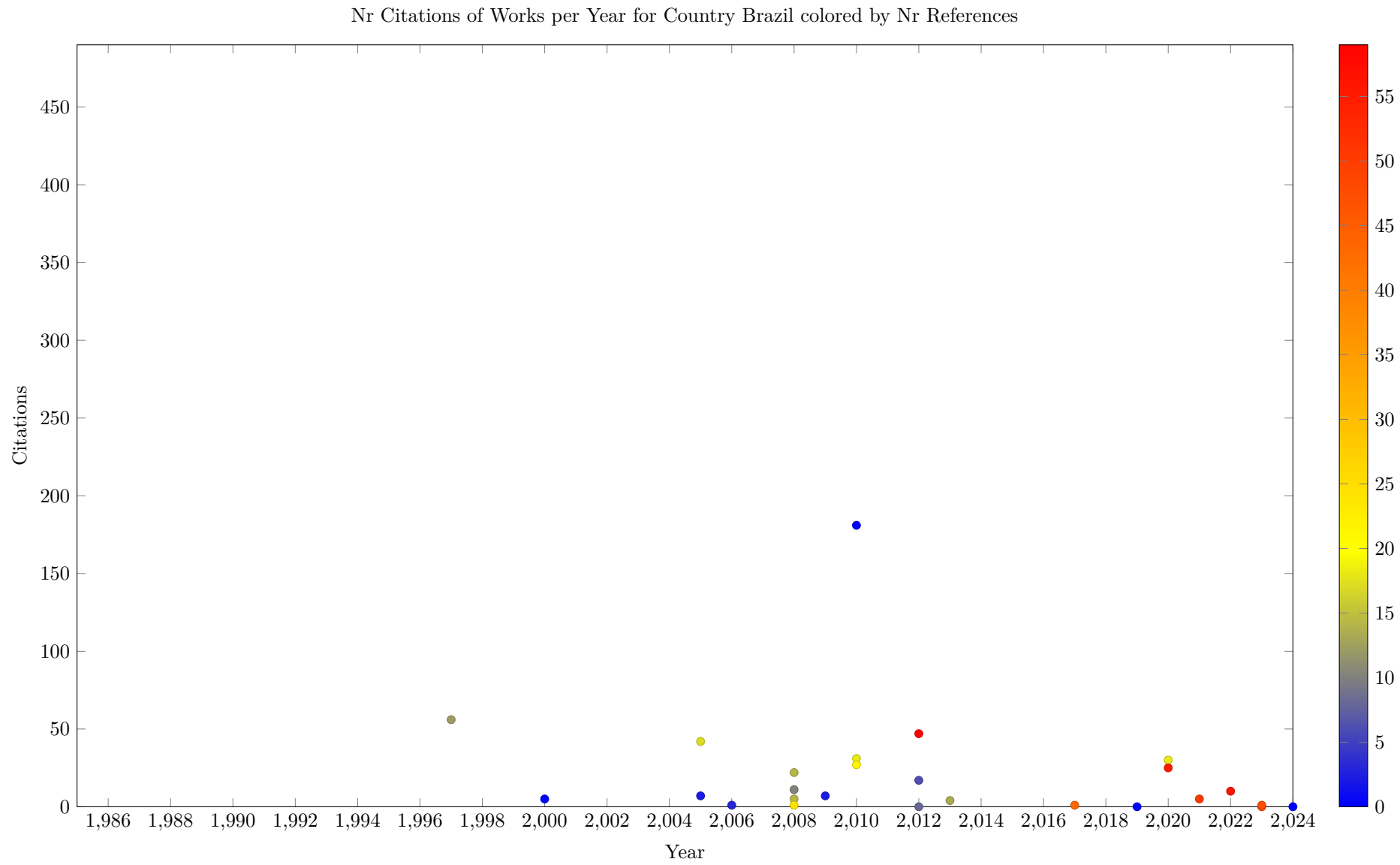


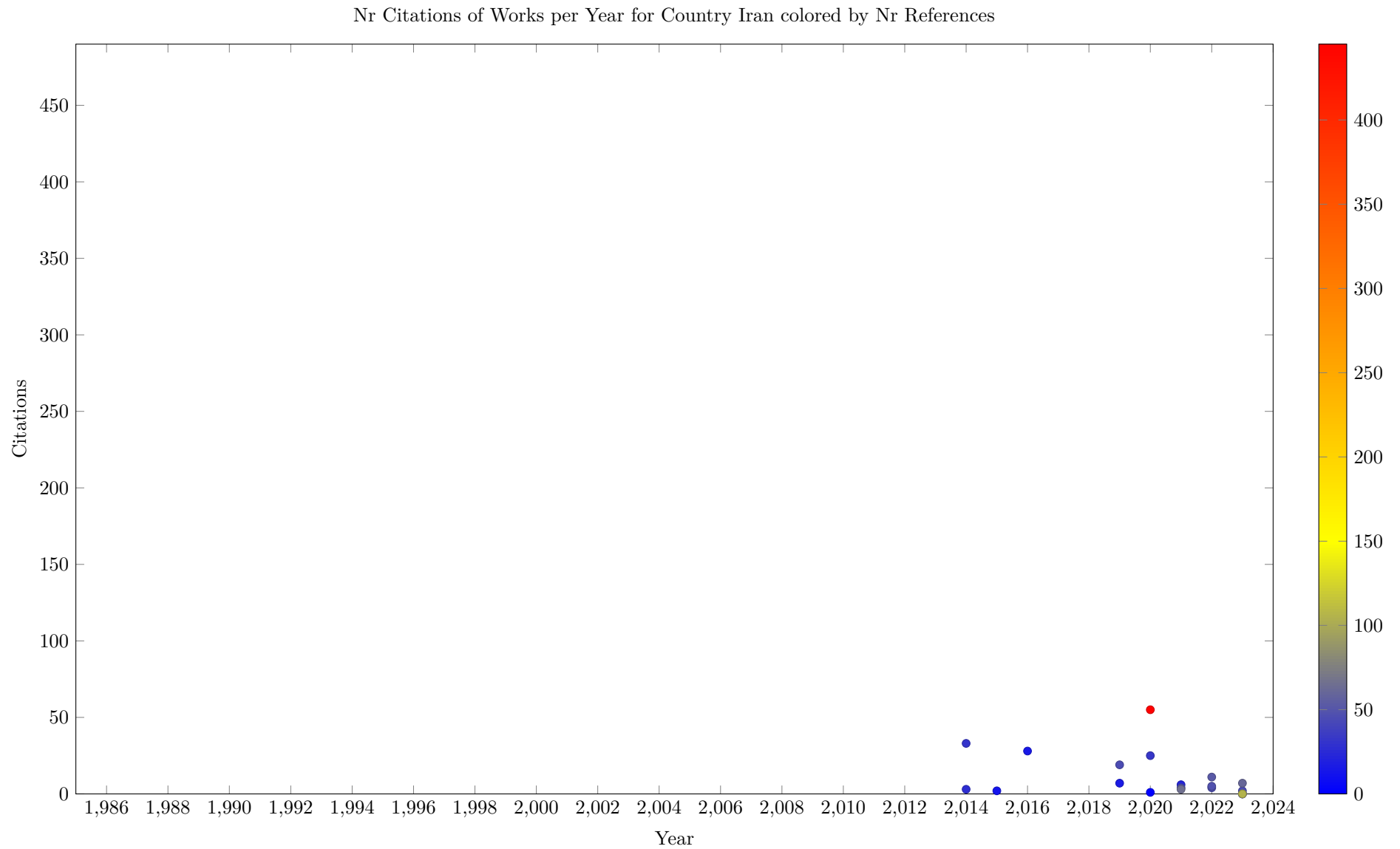


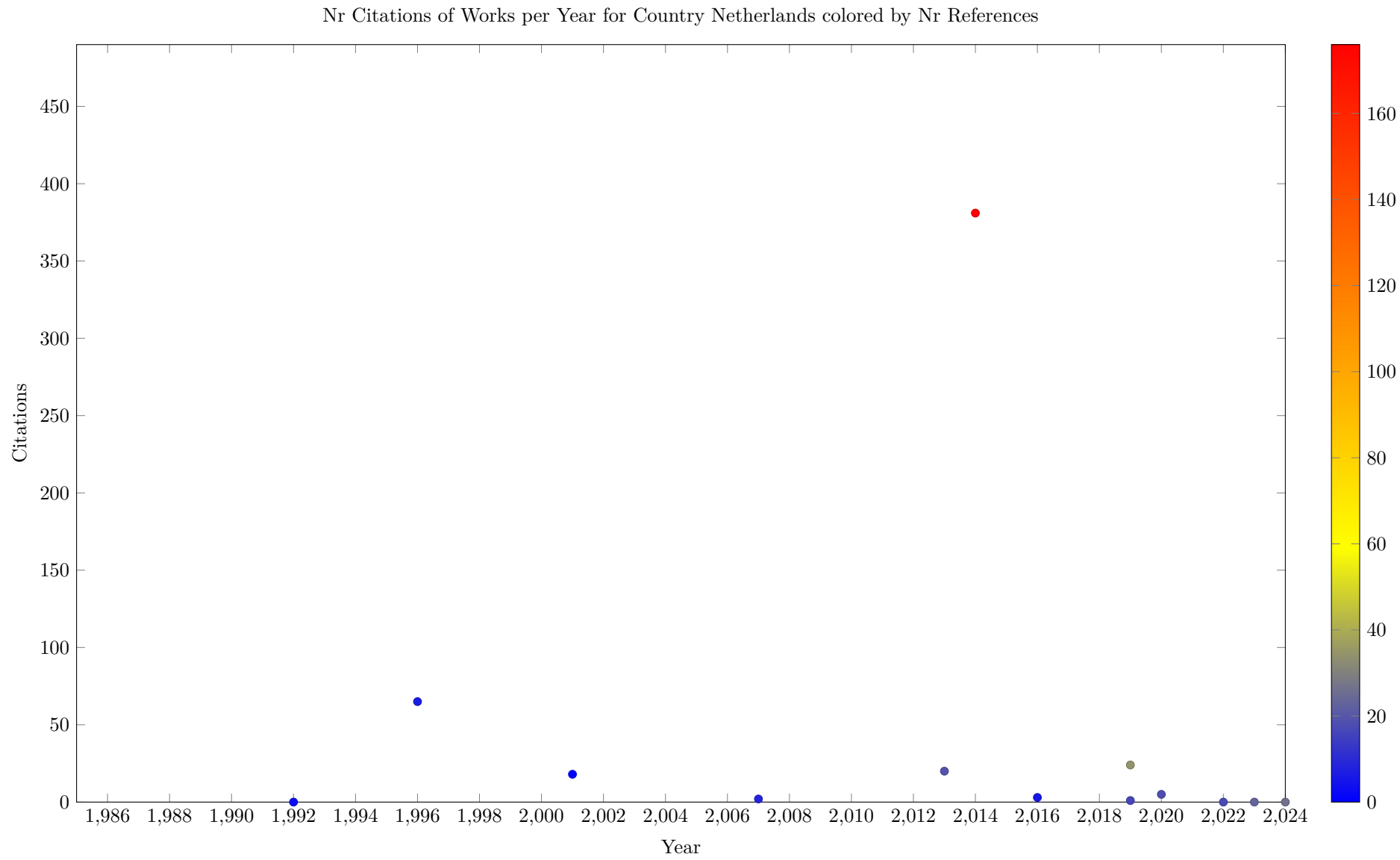


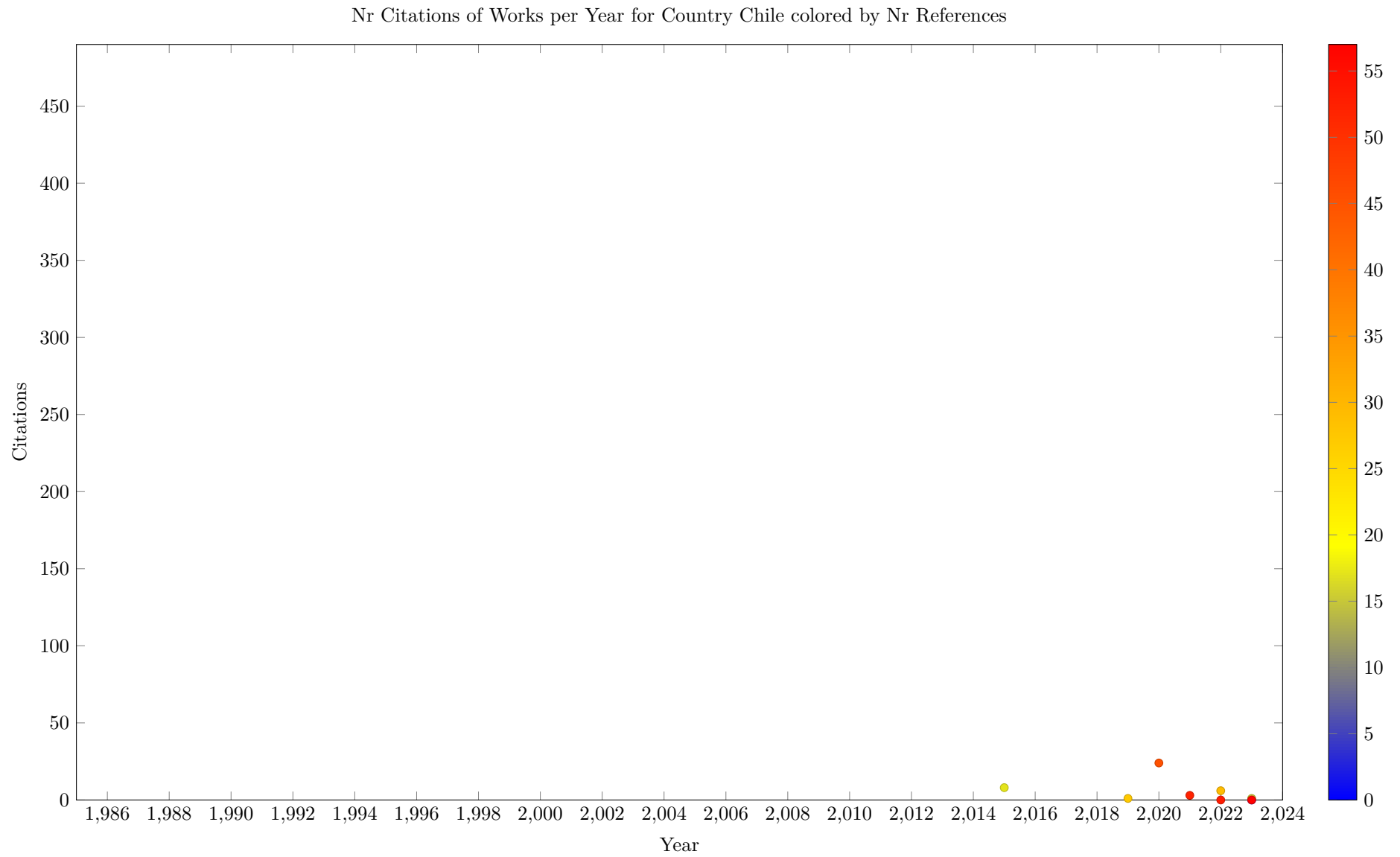


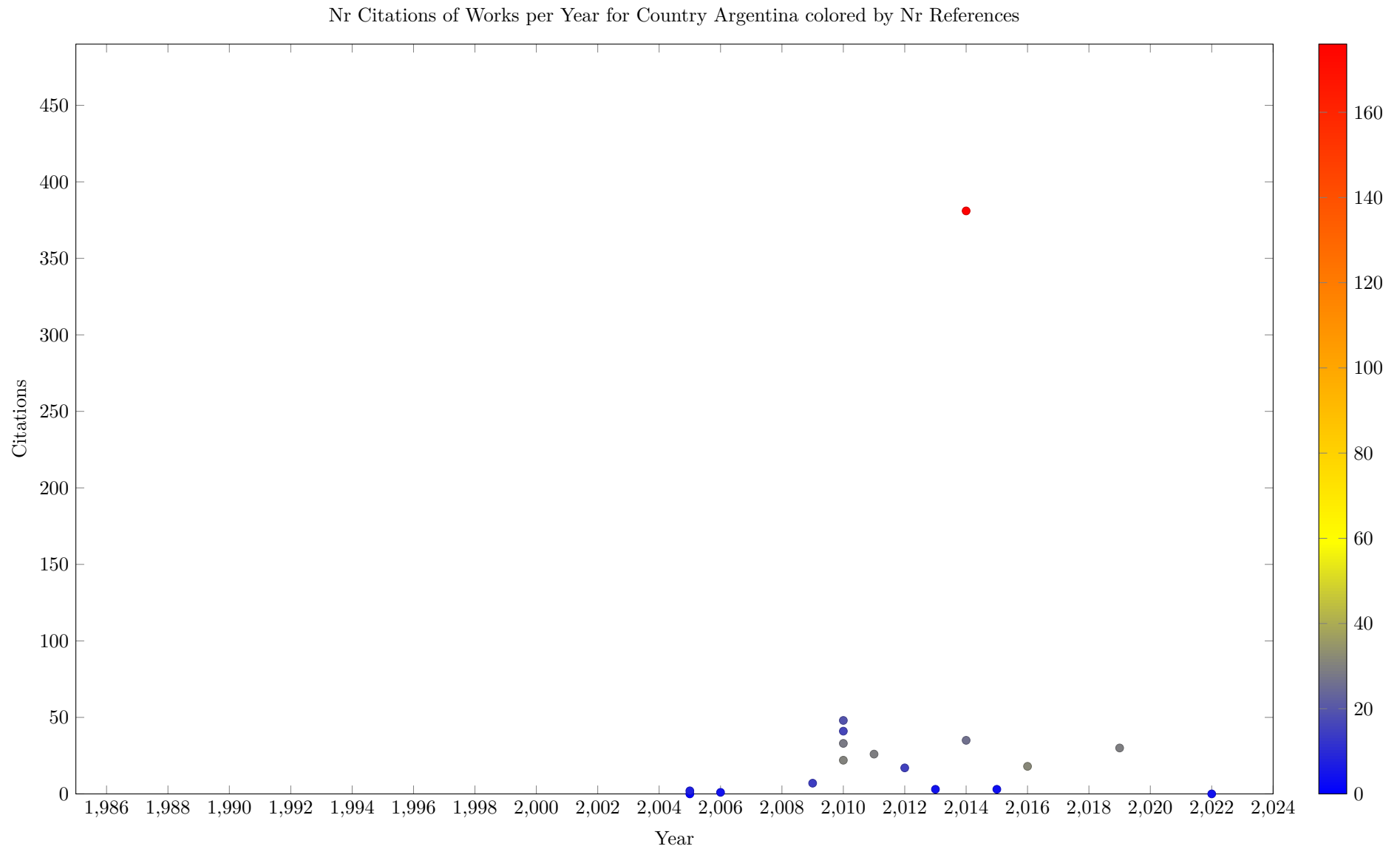


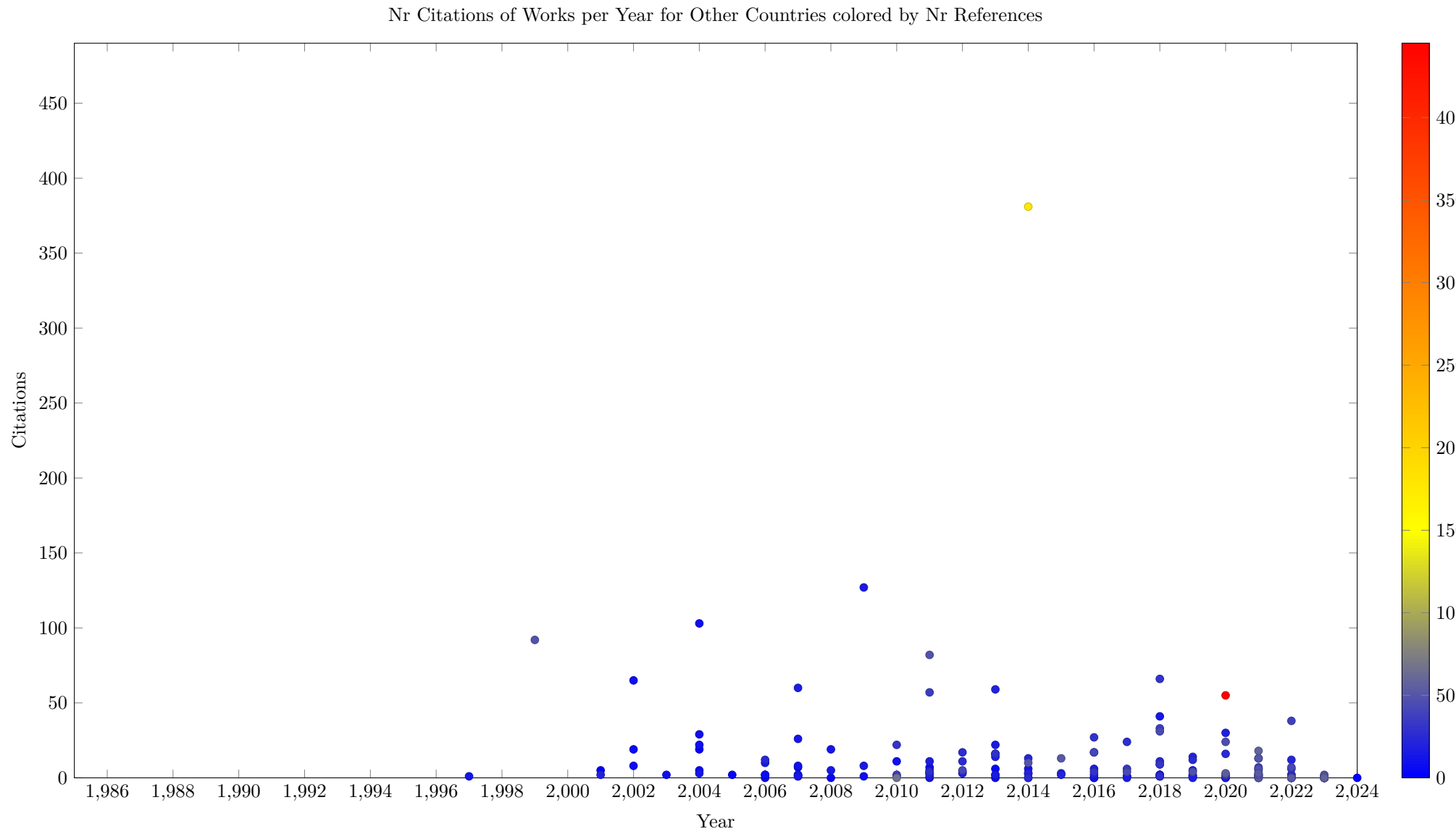












## 4 Collaborations

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.

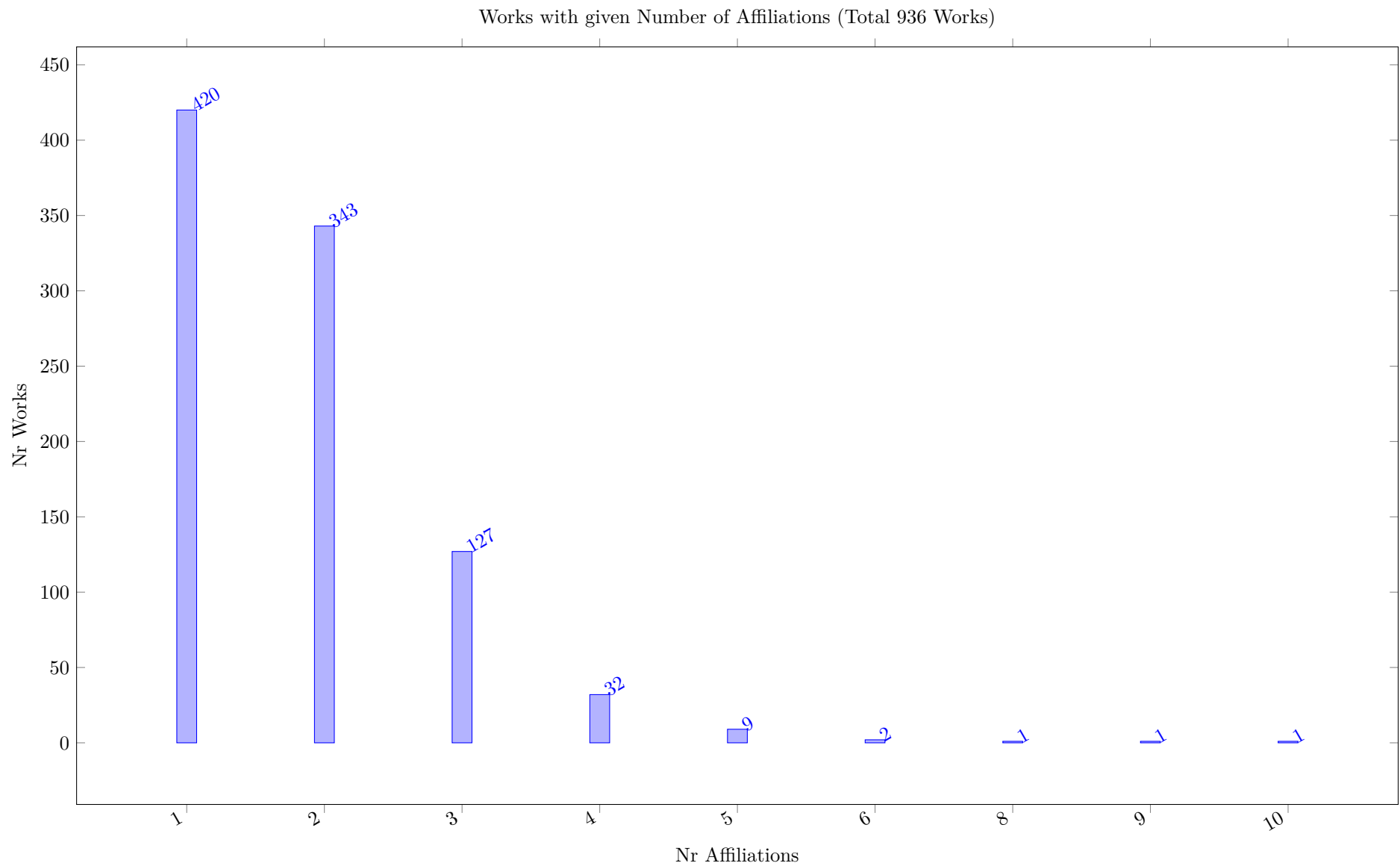




Table 8: Collaboration Data (Top 45 Inst by Decreasing Collab Fraction)

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 Koszalin, 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
University of Windsor, Windsor, Canada	6	13	11	2	6.00	5.17	0.83	100.00	13.89
ABB Corporate Research, Vasteras, Vasteras, Sweden	6	12	10	2	6.00	5.00	1.00	100.00	16.67
Izmir Ekonomi Üniversitesi, Izmir, Turkey	8	12	5	7	6.00	3.50	2.50	75.00	31.25
Universidad Nacional del Litoral, Santa Fe, Argentina	16	14	4	10	6.00	4.00	2.00	37.50	12.50
Magyar Tudományos 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
Technische Universität Berlin, Berlin, Germany	6	13	5	8	5.00	3.50	1.50	83.33	25.00
Université Grenoble Alpes, Saint Martin d'Heres, France	5	8	7	1	5.00	4.67	0.33	100.00	6.67
National University of Singapore, Singapore City, Singapore	5	7	1	6	5.00	0.50	4.50	100.00	90.00
Czech Institute of Informatics, Robotics and Cybernetics, Prague, Czech Republic	5	7	3	4	5.00	2.50	2.50	100.00	50.00
University of Tehran, Tehran, Iran	7	7	1	6	5.00	1.00	4.00	71.43	57.14
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
Université 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
Nantes Université, Nantes, France	5	13	4	9	5.00	3.00	2.00	100.00	40.00

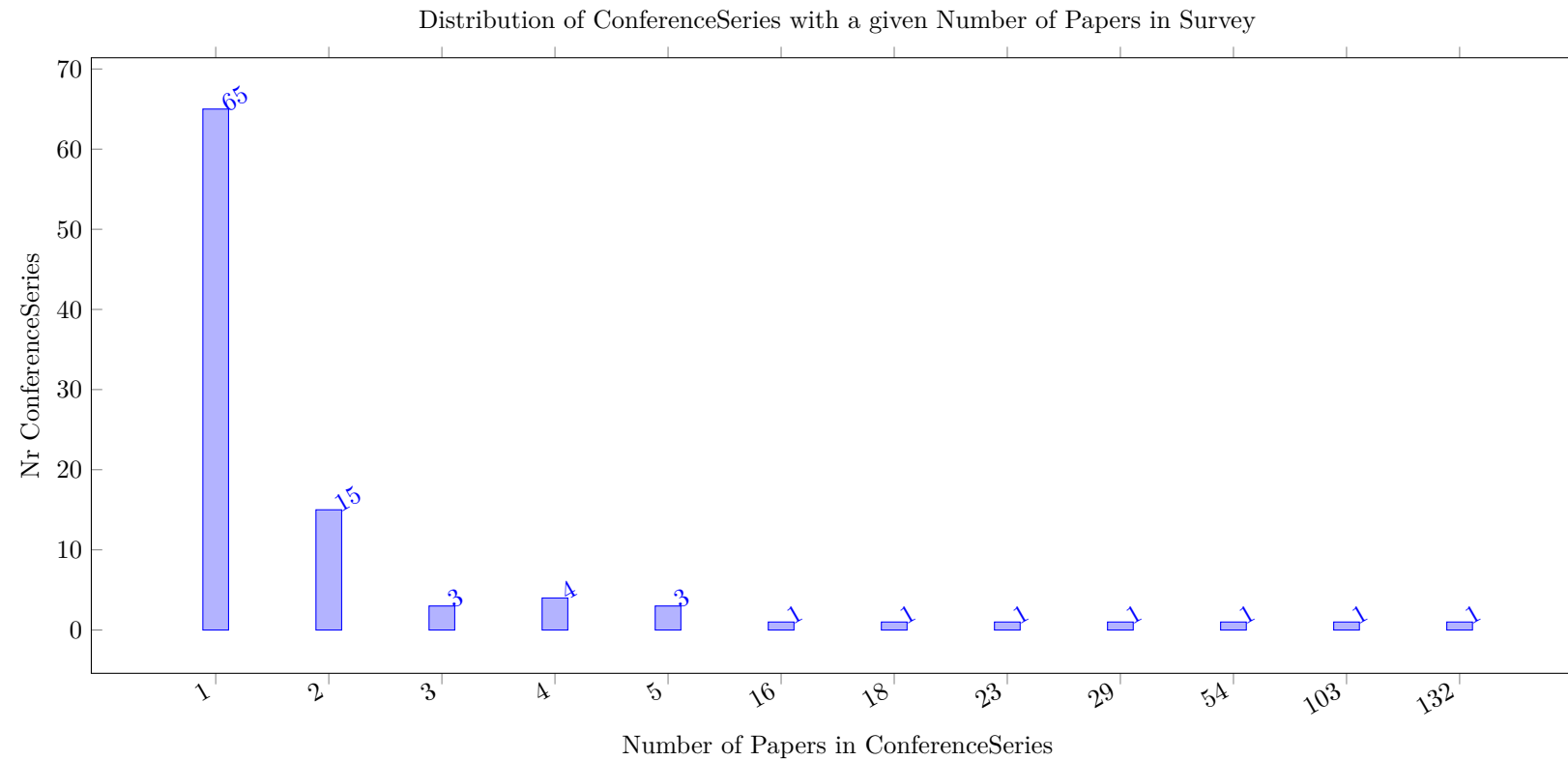
Table 9: Heat Map based on Collaboration between Countries (Fractional Count)

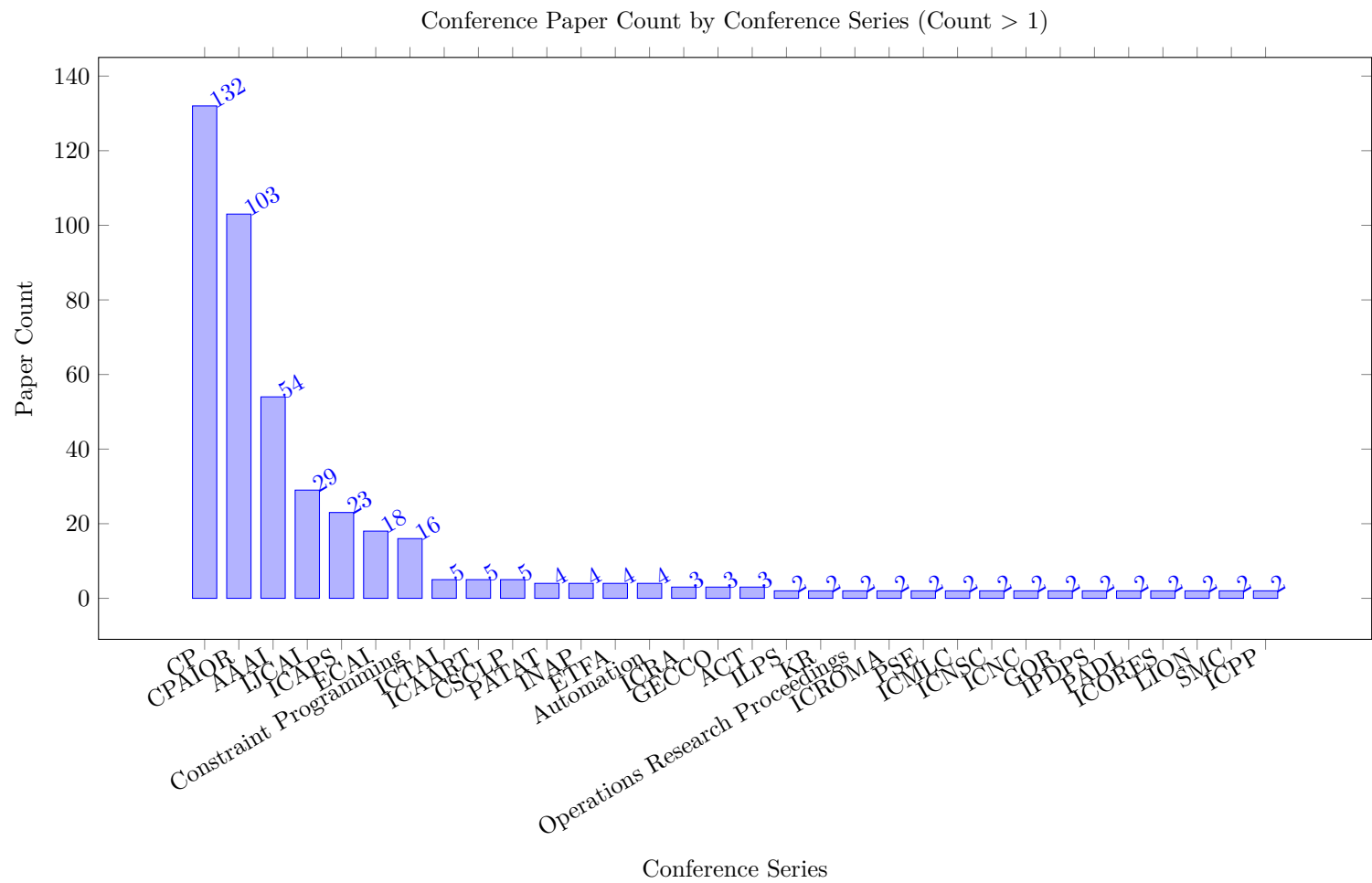
From/To	Total	To																										Other
		France	United States	Canada	China	Australia	Germany	Sweden	Italy	Turkey	Austria	United Kingdom	Ireland	Poland	Czech Republic	Chile	Belgium	Spain	Brazil	Iran	Denmark	Taiwan	Norway	Singapore	South Korea	Cameroon		
Total		204.00	152.00	96.00	89.00	81.00	67.00	50.00	41.00	37.00	31.00	30.00	29.00	25.00	22.00	22.00	21.00	20.00	19.00	17.00	15.00	15.00	13.00	13.00	12.00	12.00		
France	204.00	140.33	11.12	3.50	2.00	1.00	3.48	9.50	0.83	0.00	0.00	3.00	6.07	1.00	2.50	1.00	4.33	0.00	1.50	0.50	1.00	0.50	2.58	0.00	0.00	0.00	8.25	
United States	152.00	11.12	73.69	9.83	6.67	2.67	3.01	4.00	3.17	4.50	0.00	0.83	5.98	0.00	0.00	1.00	2.53	0.00	1.50	3.50	4.00	1.00	0.00	0.00	3.67	0.00	9.34	
Canada	96.00	3.50	9.83	61.00	1.00	0.33	4.33	0.00	1.00	1.50	0.00	0.00	3.50	0.00	0.00	0.00	1.00	1.00	0.00	3.00	0.00	0.00	0.00	0.00	1.00	4.00		
China	89.00	2.00	6.67	1.00	62.00	1.00	0.00	0.00	1.00	2.33	0.00	2.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.83	0.00	4.50		
Australia	81.00	1.00	2.67	0.33	1.00	55.67	5.17	0.00	4.92	0.25	1.00	1.00	0.50	0.00	0.00	0.00	0.00	1.00	0.00	0.50	1.67	0.00	0.33	0.00	0.00	4.00		
Germany	67.00	3.48	3.01	4.33	0.00	5.17	33.22	1.00	1.50	0.00	2.00	0.33	0.57	1.00	1.00	0.00	0.00	1.00	0.67	0.50	1.33	0.00	0.00	1.00	0.00	5.89		
Sweden	50.00	9.50	4.00	0.00	0.00	0.00	1.00	26.67	1.33	0.00	0.00	0.50	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	2.00	2.00		
Italy	41.00	0.83	3.17	1.00	1.00	4.92	1.50	1.33	12.67	0.25	1.00	2.50	1.00	0.00	1.00	1.00	2.00	1.00	0.00	0.00	0.00	0.83	0.00	0.00	0.00	4.00		
Turkey	37.00	0.00	4.50	1.50	2.33	0.25	0.00	0.00	0.25	24.67	0.00	0.50	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00		
Austria	31.00	0.00	0.00	0.00	0.00	1.00	2.00	0.00	1.00	0.00	27.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
United Kingdom	30.00	3.00	0.83	0.00	2.67	1.00	0.33	0.50	2.50	0.50	0.00	9.00	1.50	0.00	0.00	0.00	0.50	0.00	1.17	0.00	1.00	0.00	0.50	0.00	0.00	5.00		
Ireland	29.00	6.07	5.98	3.50	0.00	0.50	0.57	0.00	1.00	2.00	0.00	1.50	6.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.50		
Poland	25.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	17.00	0.00	0.00	0.00	0.00	0.00	4.00	0.00	0.00	0.00	0.00	0.00	2.00		
Czech Republic	22.00	2.50	0.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	13.00	0.00	0.00	3.00	0.00	1.50	0.00	0.00	0.00	0.00	0.00	0.00		
Chile	22.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	13.20	0.00	1.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.60		
Belgium	21.00	4.33	2.53	1.00	0.00	0.00	0.00	2.00	2.00	0.00	0.00	0.50	0.00	0.00	0.00	0.00	5.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	2.60		
Spain	20.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	3.00	1.20	0.00	9.40	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.40		
Brazil	19.00	1.50	1.50	0.00	0.00	0.00	0.67	0.00	0.00	0.00	0.00	1.17	0.00	0.00	0.00	0.00	0.00	1.00	12.67	0.00	0.00	0.00	0.00	0.00	0.00	0.50		
Iran	17.00	0.50	3.50	3.00	0.00	0.50	0.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.50	0.00	0.00	0.00	0.00	7.00	0.00	0.00	0.00	0.00	0.00	0.50		
Denmark	15.00	1.00	4.00	0.00	0.00	1.67	1.33	0.00	0.00	0.00	0.00	1.00	0.00	4.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00		
Taiwan	15.00	0.50	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.00	0.50	0.00	0.00	0.00	5.00		
Norway	13.00	2.58	0.00	0.00	0.00	0.33	0.00	1.00	0.83	0.00	0.00	0.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	4.00	0.00	0.00	0.00	3.25		
Singapore	13.00	0.00	0.00	0.00	5.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.67	0.00	0.00	2.50		
South Korea	12.00	0.00	3.67	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	4.00	0.00	2.33		
Cameroon	12.00	0.00	0.00	1.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.00	0.00		
Greece	12.00	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.00	0.00	0.00	10.00		
Argentina	12.00	0.00	0.44	0.00	0.00	0.00	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.33		
Tunisia	11.00	3.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.00		
Hungary	10.00	1.50	0.00	2.50	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.00		
Netherlands	10.00	1.00	2.29	0.00	1.00	2.00	0.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.67		
Japan	7.00	0.00	0.50	0.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.00		
Pakistan	7.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.00	5.50		
Switzerland	7.00	0.00	0.00	0.00	0.00	0.00	1.00	2.00	4.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Mexico	6.00	0.00	1.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	2.00	0.00	0.00	0.00	0.50	0.00	0.00	0.00	0.00	0.00	0.00		
Hong Kong	6.00	0.00	1.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	2.00	0.00	0.00	0.00		
Luxembourg	5.00	0.50	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.00	0.00	0.00	3.00	0.00	0.00	0.00	0.00		
Colombia	4.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.60	0.00	1.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Portugal	4.00	0.00	0.44	0.00	0.00	0.00	0.22	0.00	0.00	0.00	0.00	0.50	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.83		
Indonesia	4.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.00	0.00	0.00	0.00	0.00	0.00		
Serbia	4.00	0.00	0.00	0.00	0.00	0.00	0.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.50		
Other		2.00	2.17	1.00	1.50	1.00	2.50	0.00	0.00	0.00	0.00	1.00	0.50	2.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.50	1.83	0.00			

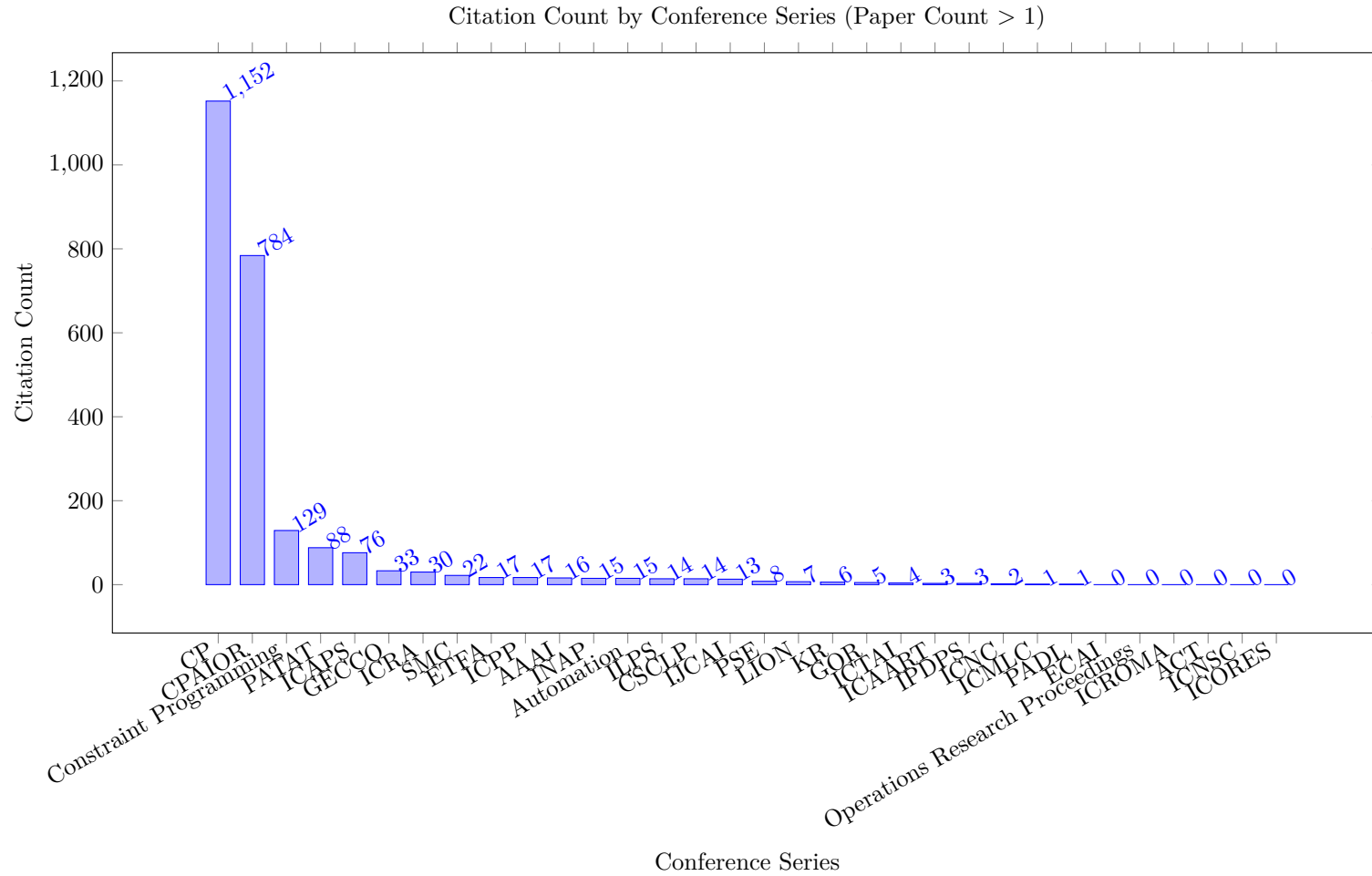
Table 10: Heat Map based on Collaboration between Countries (Integer Count)

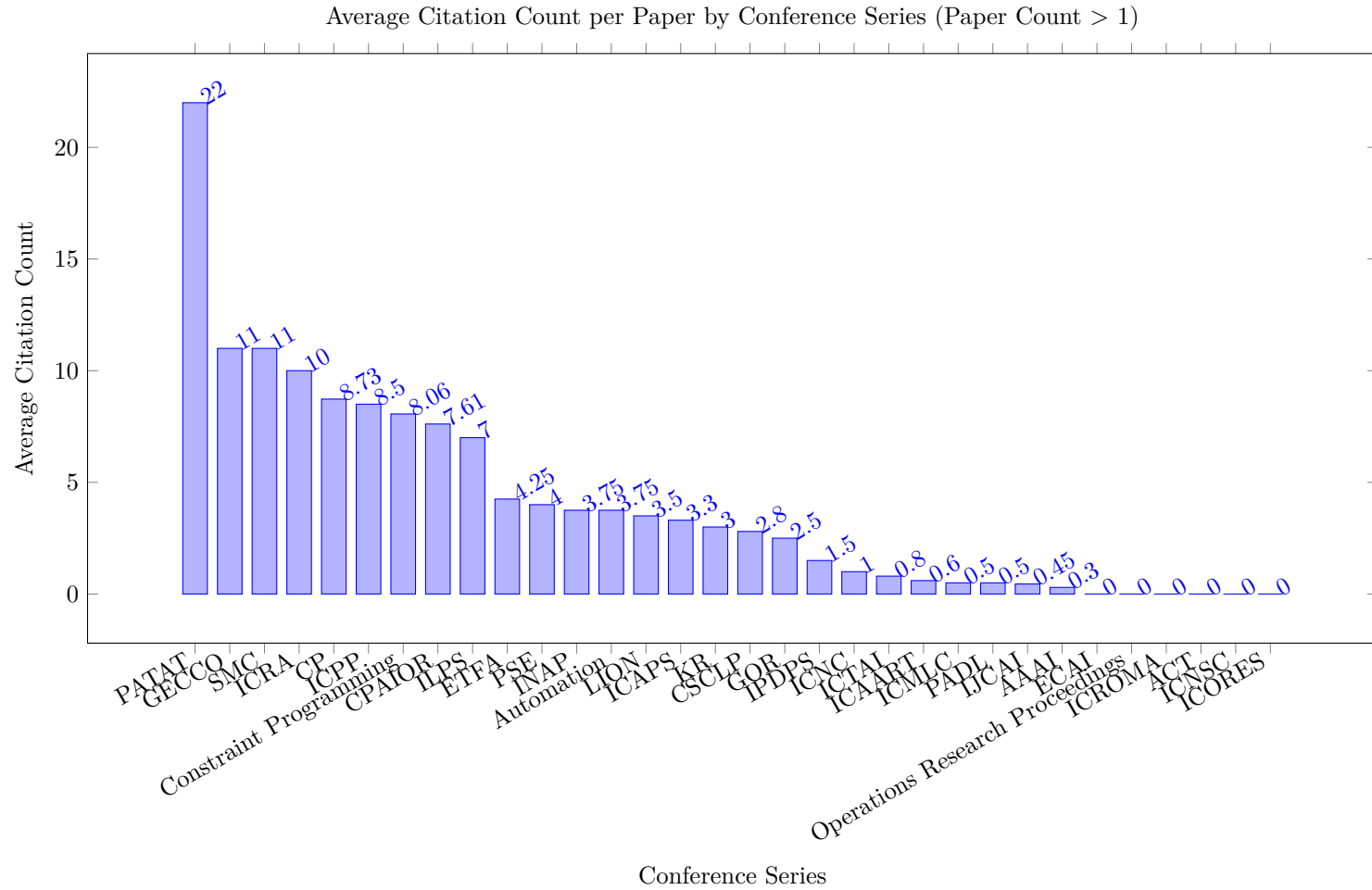
From/To Total	Total	United States	France	Germany	Canada	Italy	Australia	United Kingdom	Sweden	Belgium	Turkey	Denmark	Norway	Netherlands	Spain	Poland	China	Switzerland	Hong Kong	Ireland	Austria	Finland	Macao	Cyprus	Peru	Iran	Other
United States	120.00	0.00	16.00	7.00	13.00	5.00	5.00	3.00	6.00	3.00	6.00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

## 5 Conference Papers by Most Common Conference Series



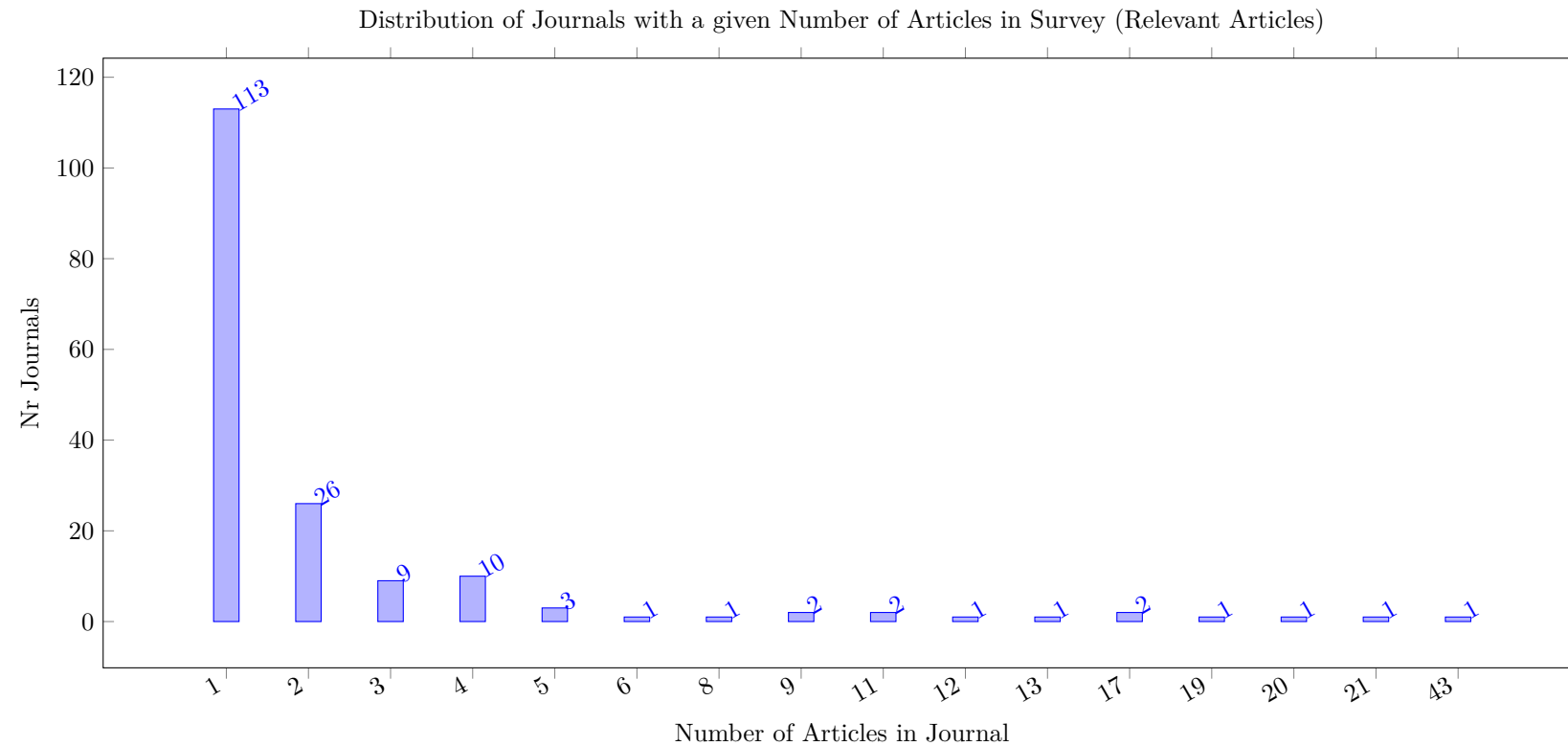




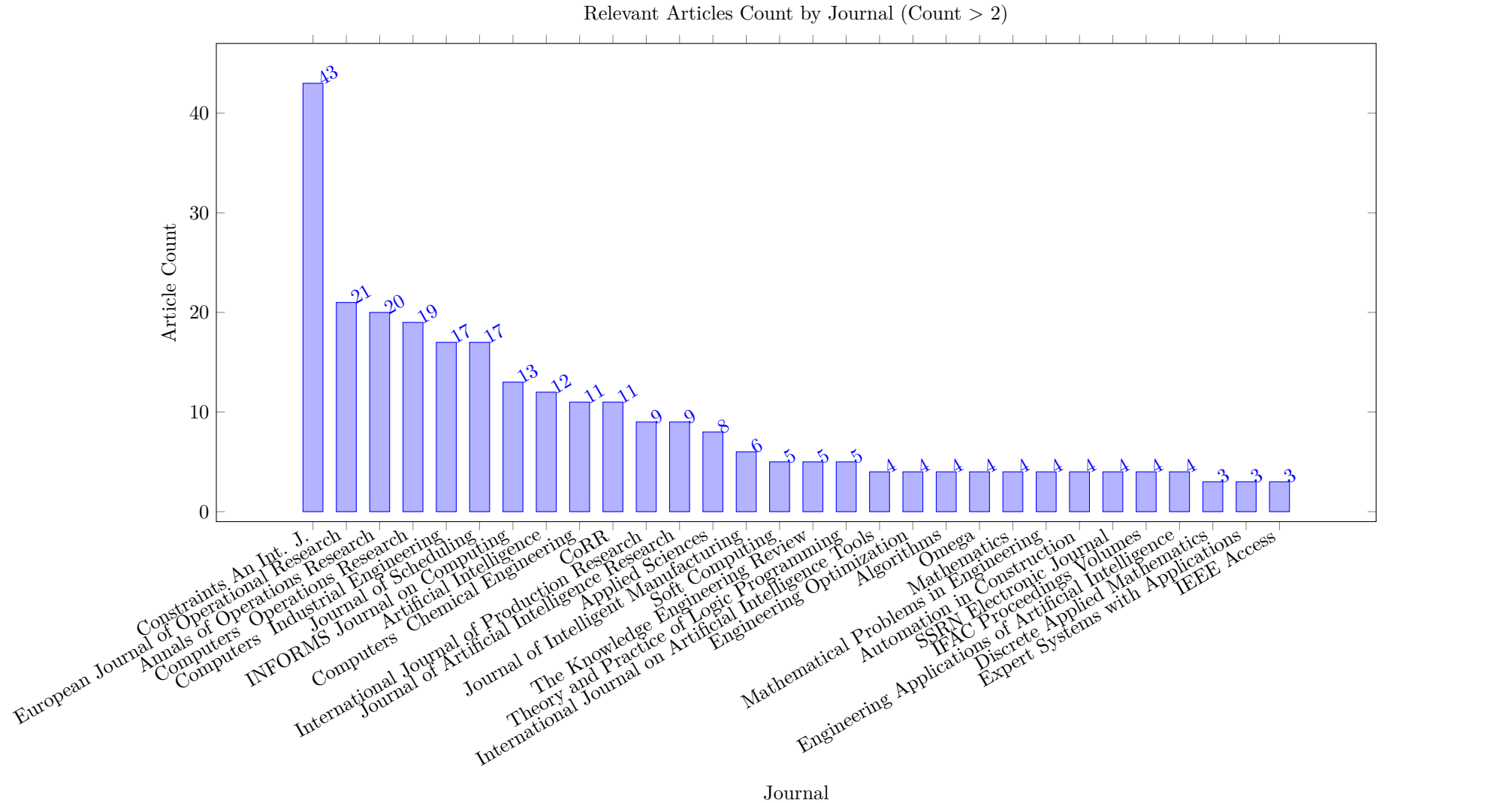


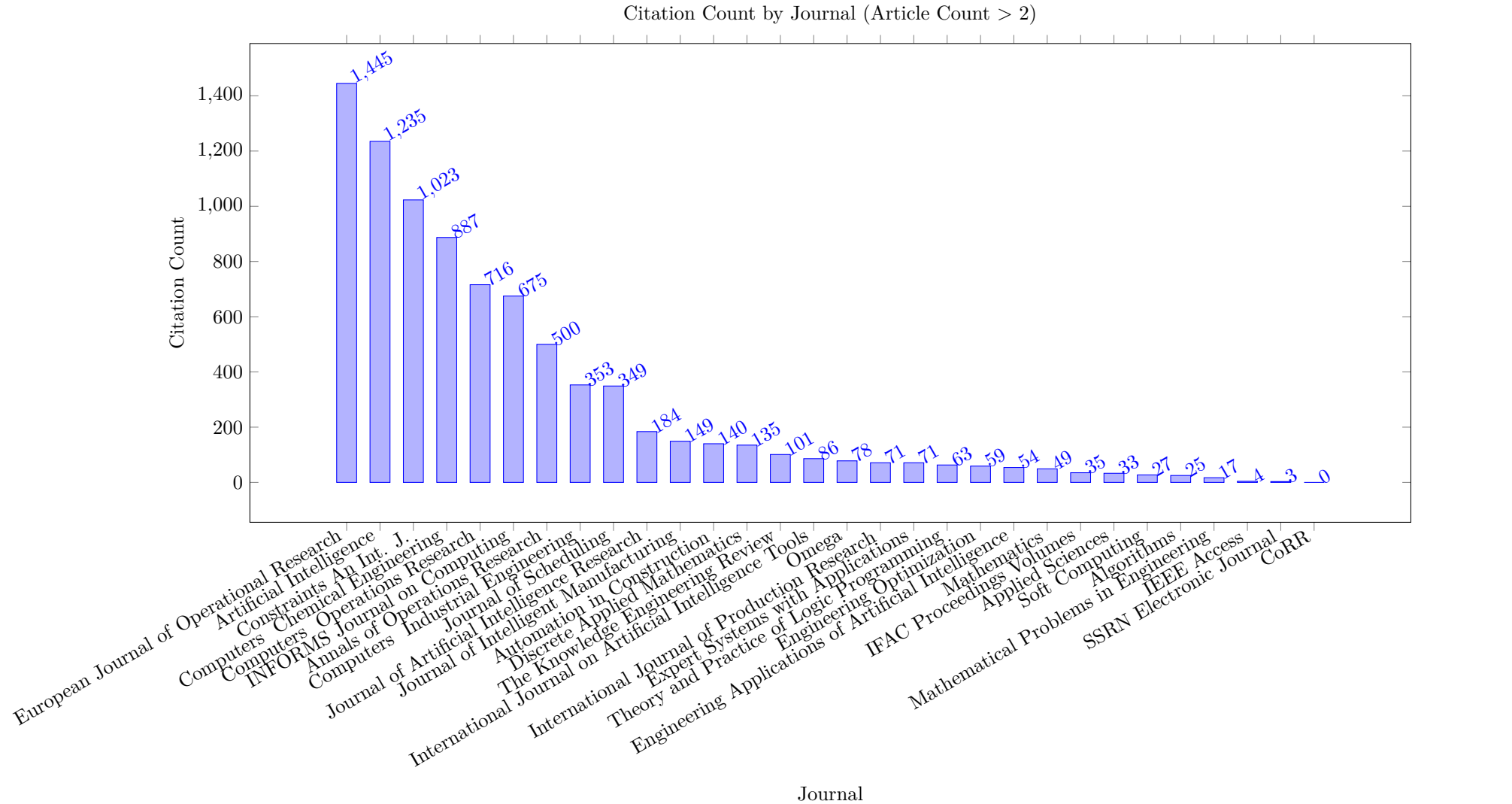
## 6 Journal Articles by Most Common Journals

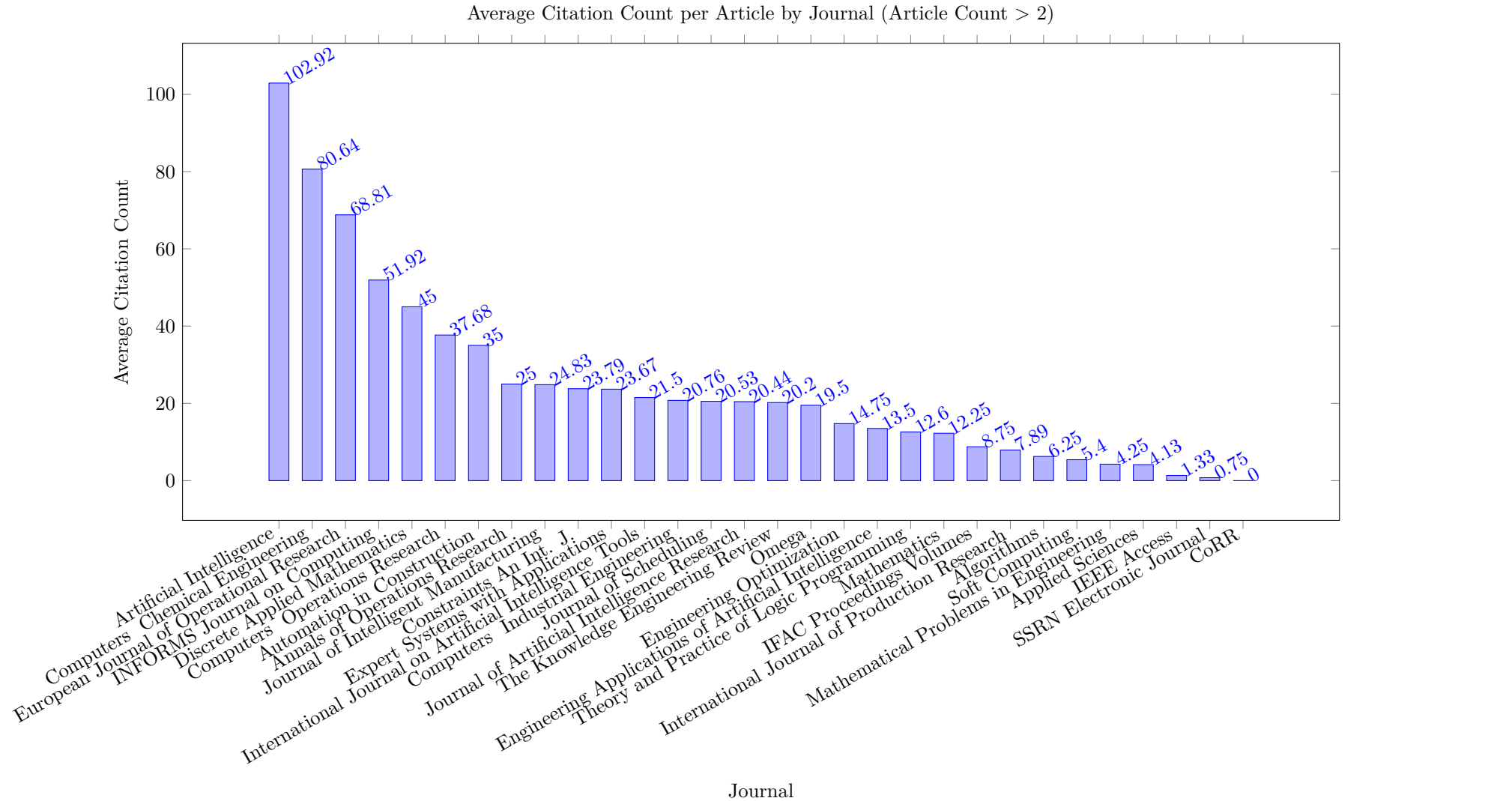
### 6.1 Relevant Articles



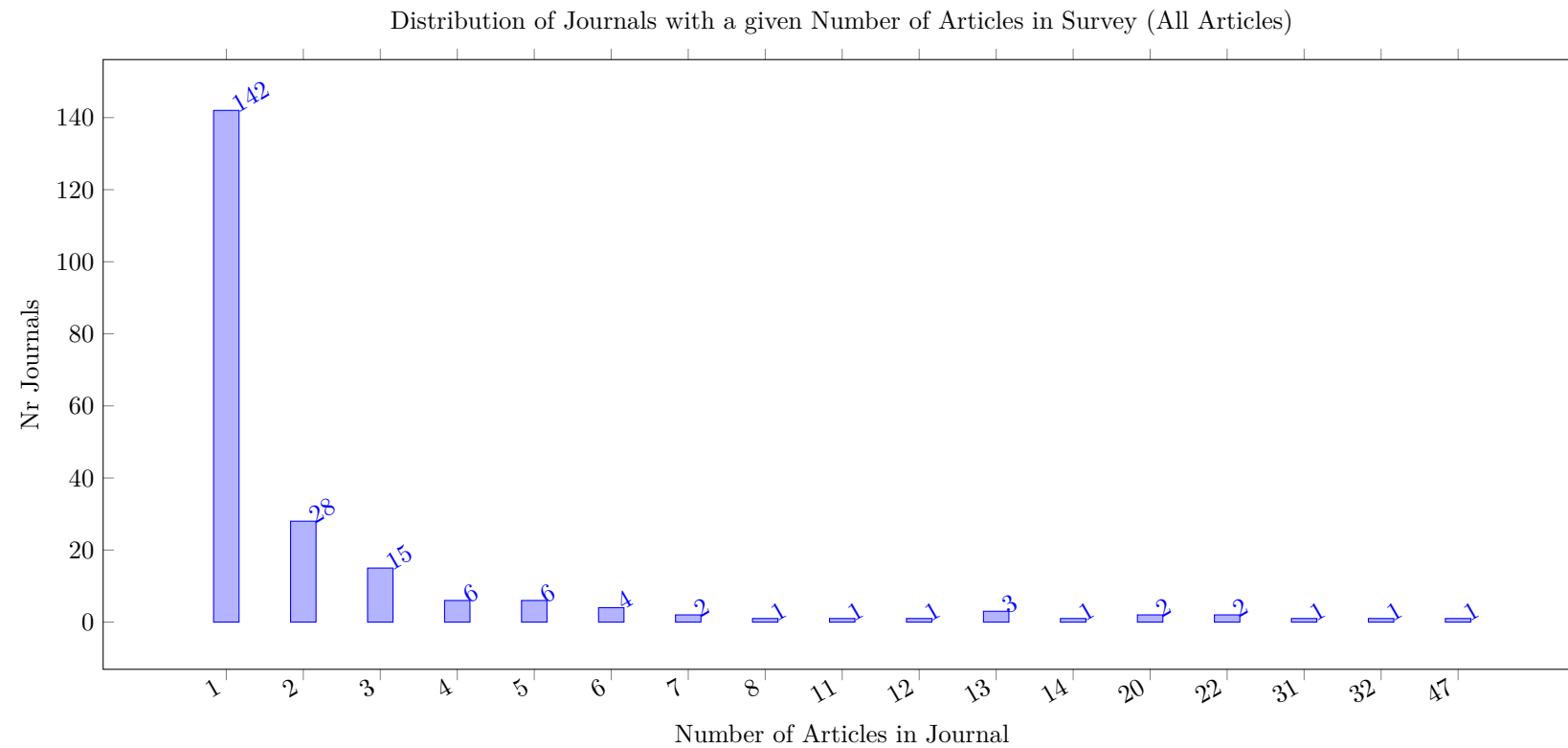


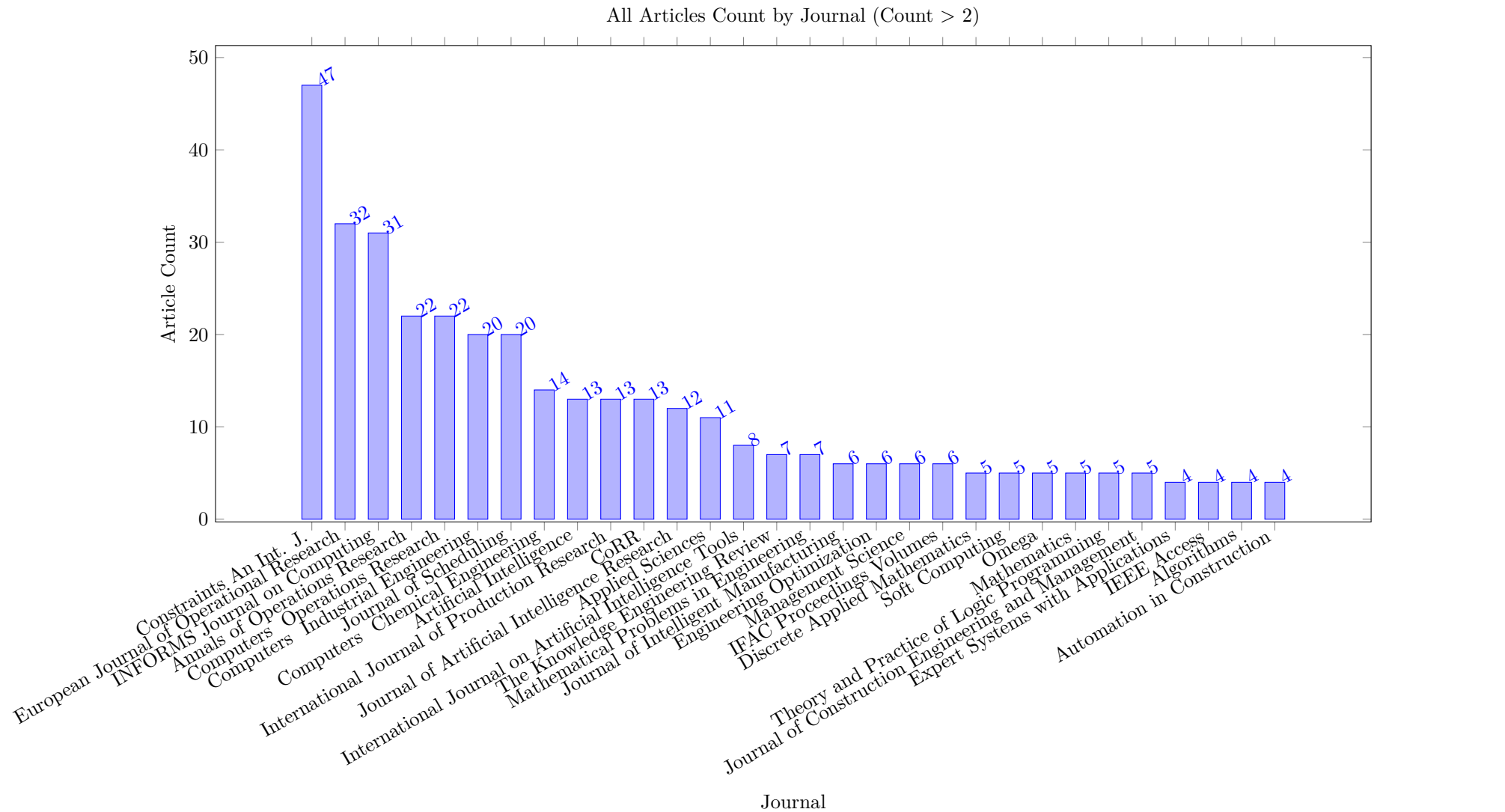


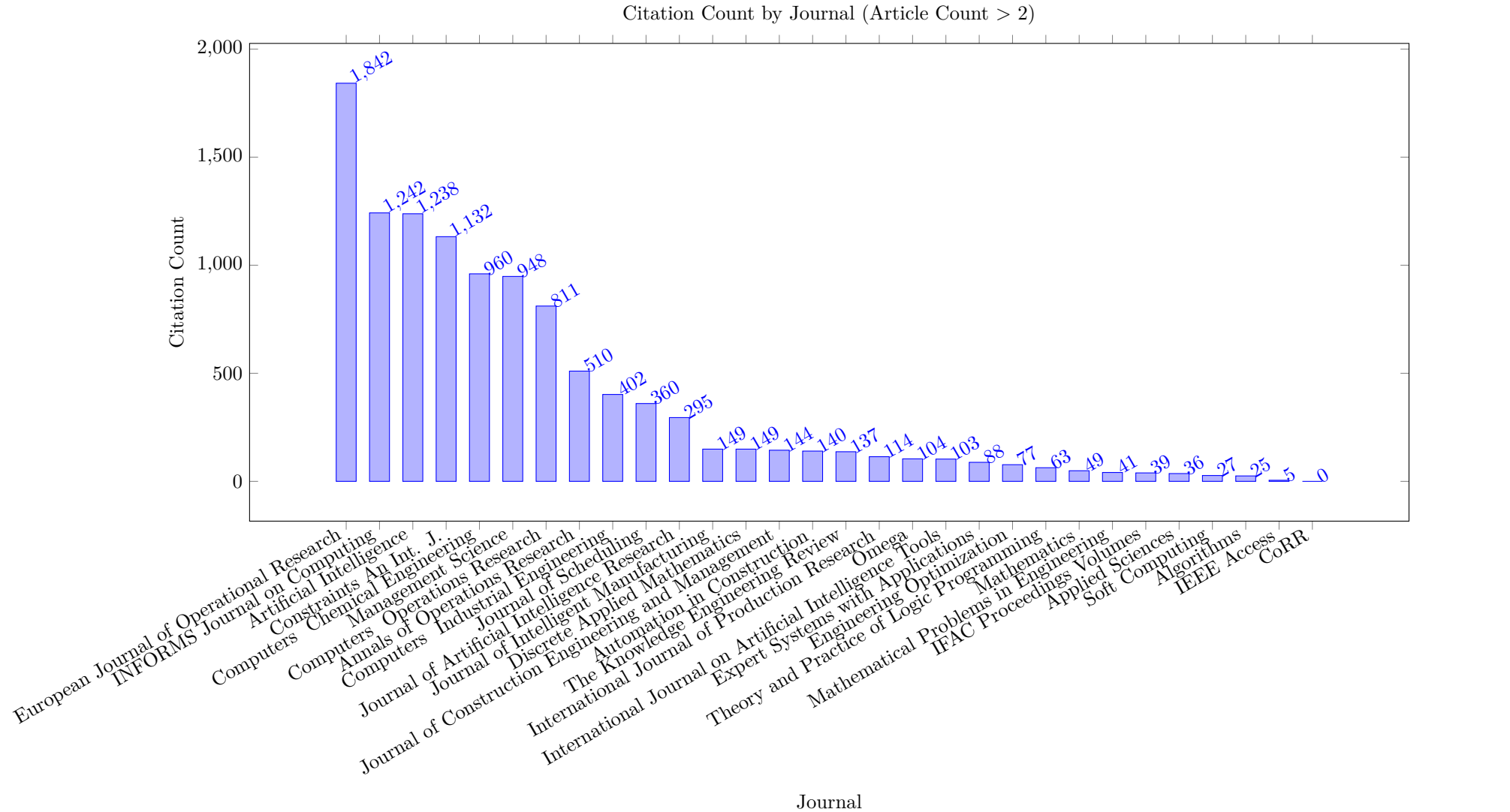


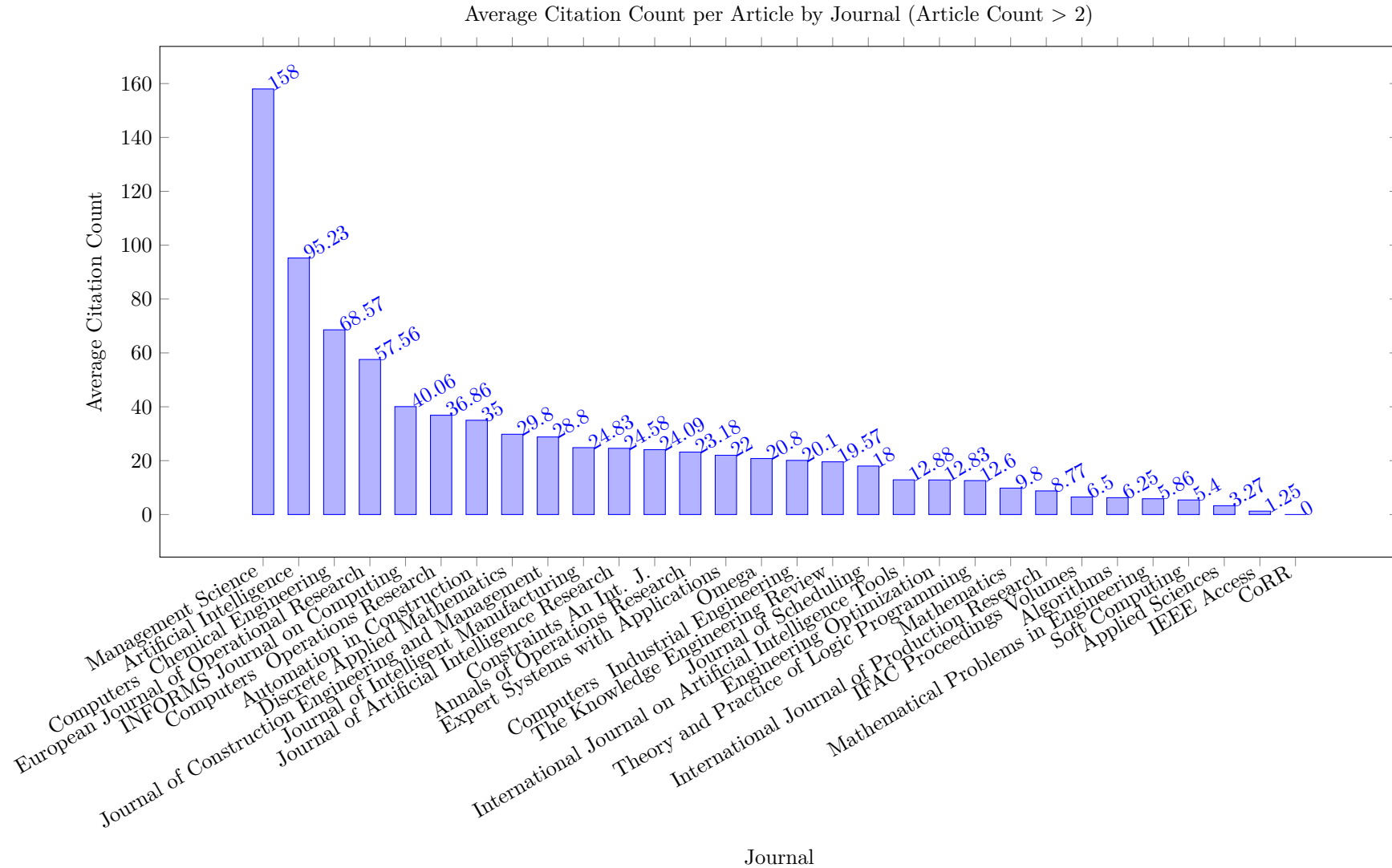


## 6.2 All Articles



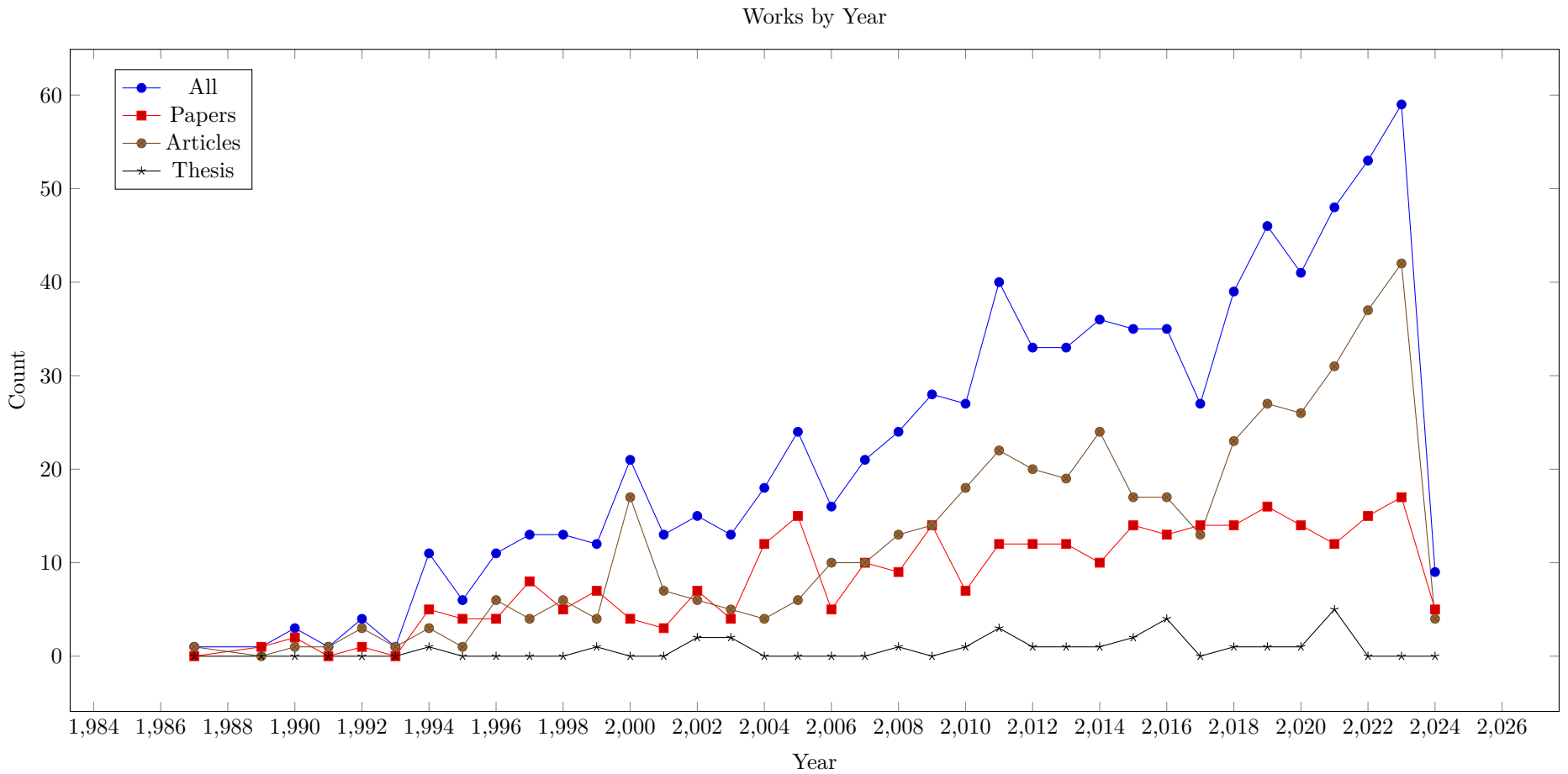




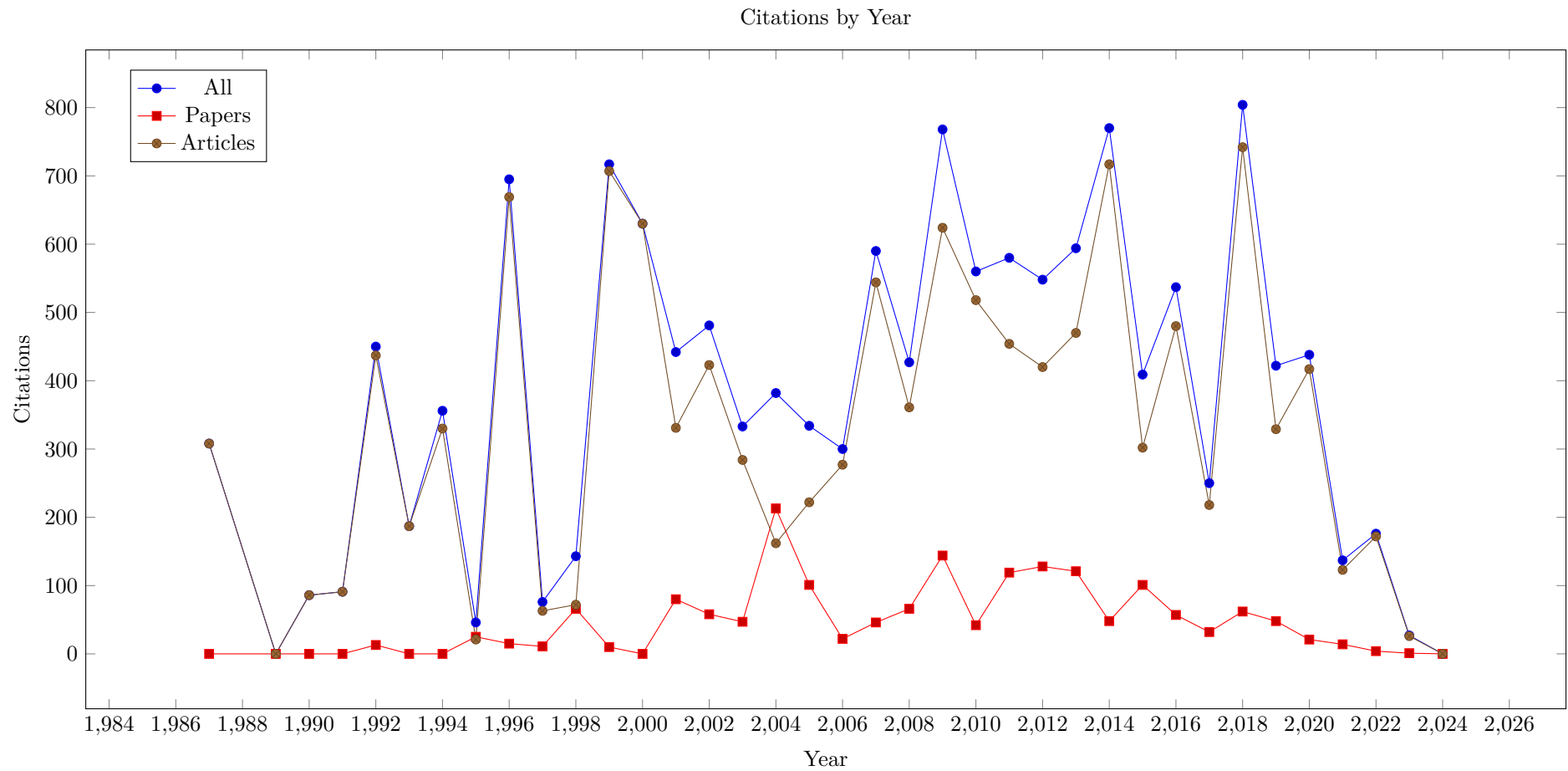


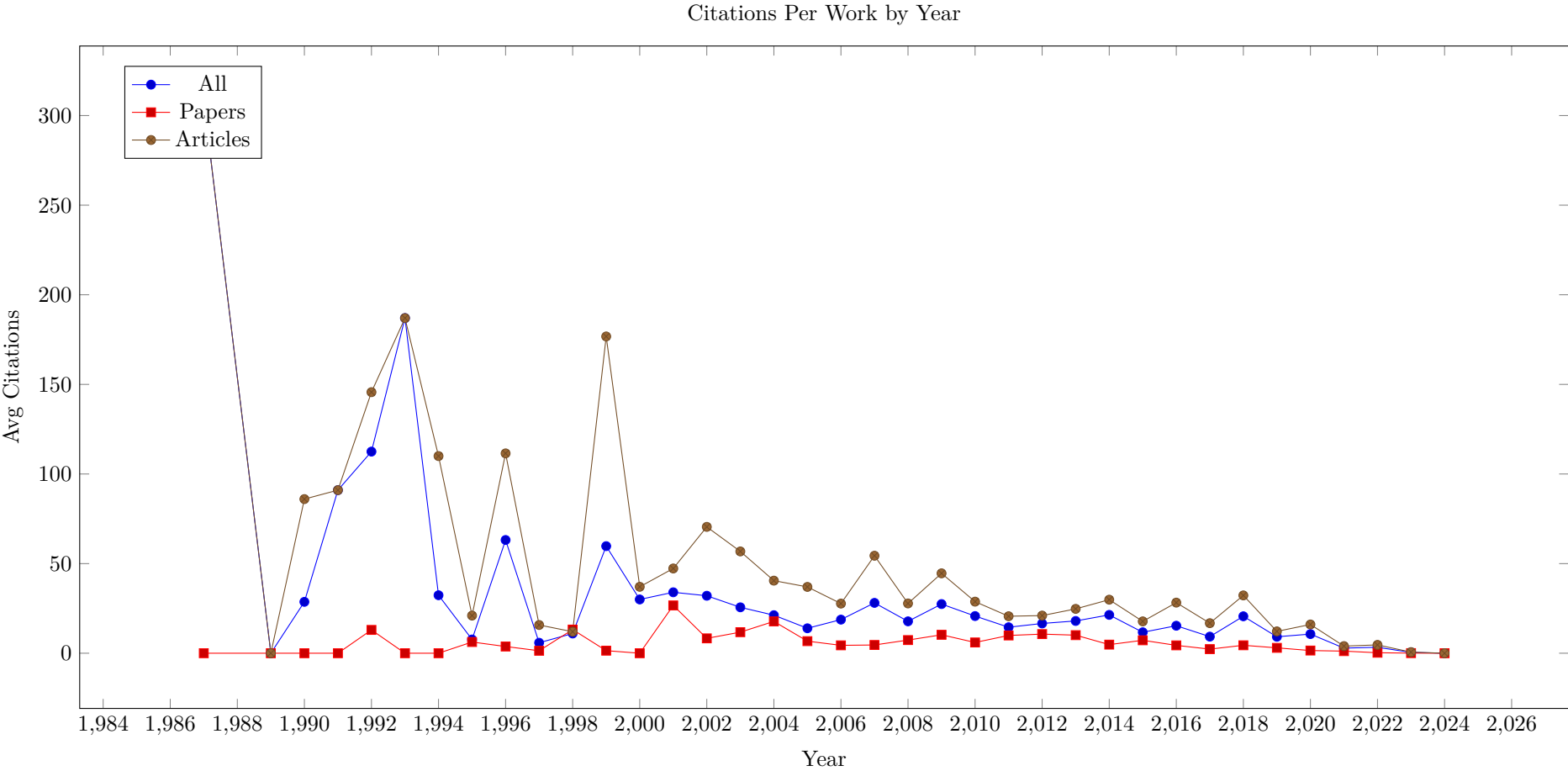
## 7 Works by Year

### 7.1 Relevant Works

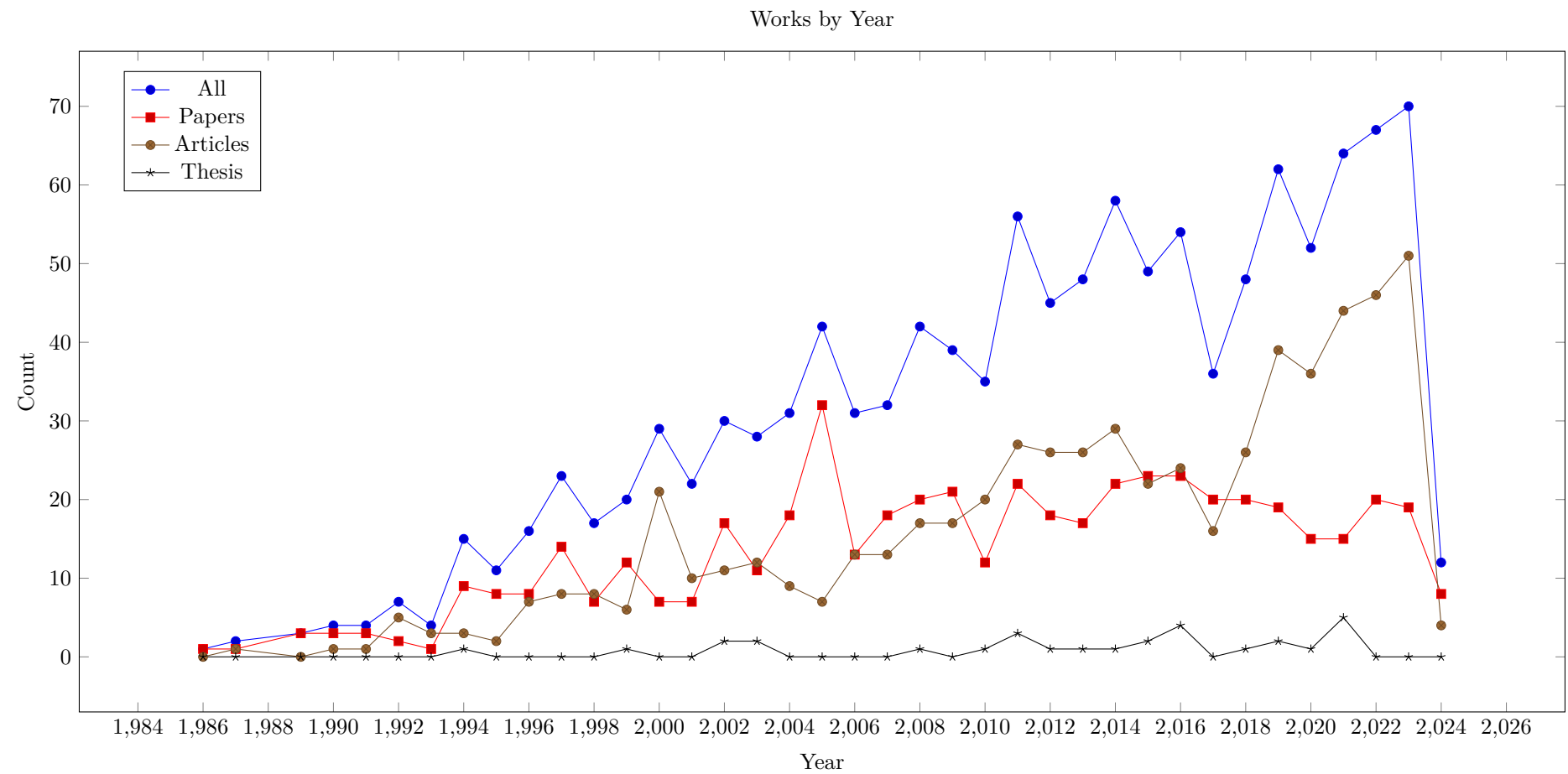


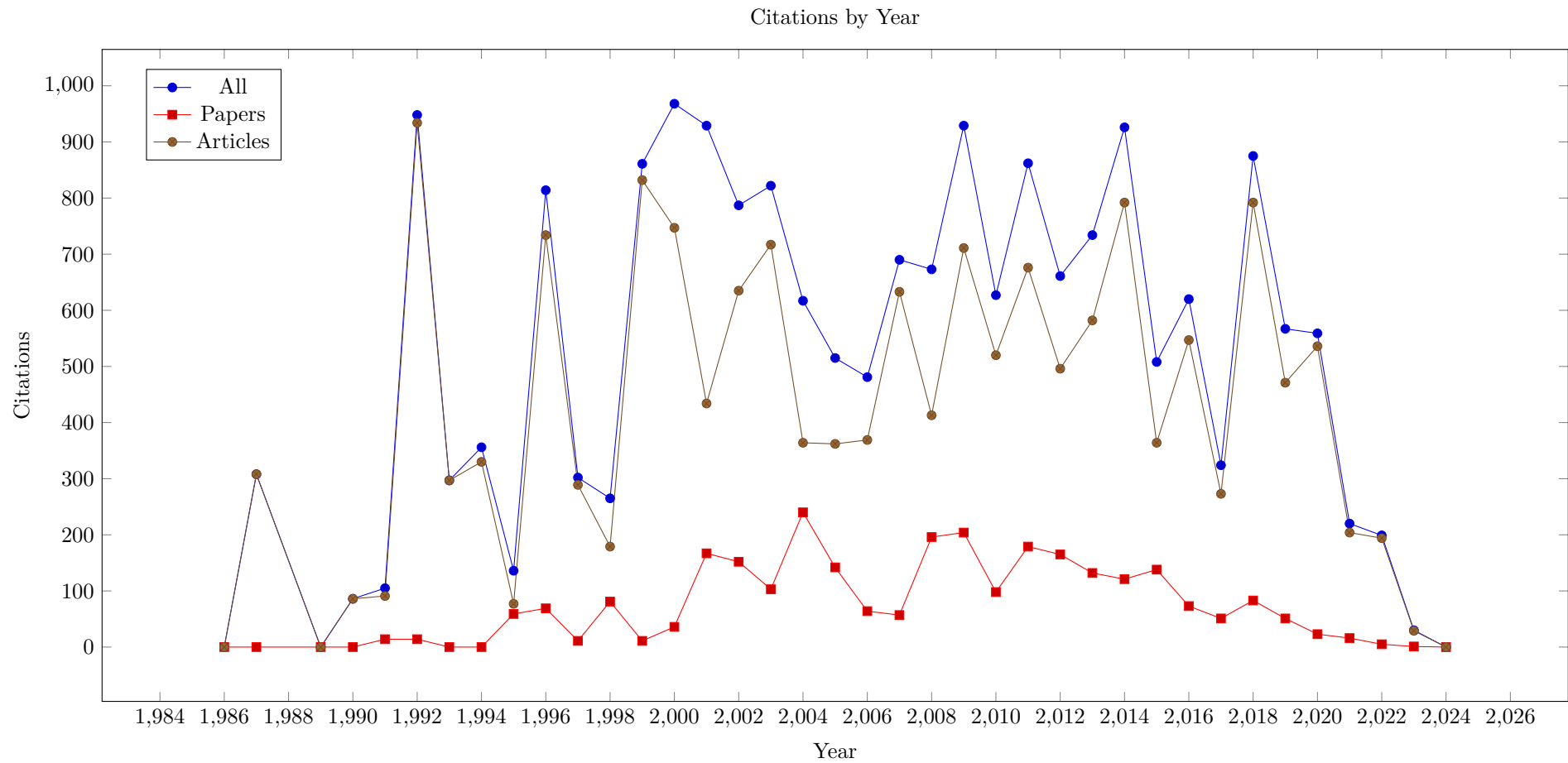


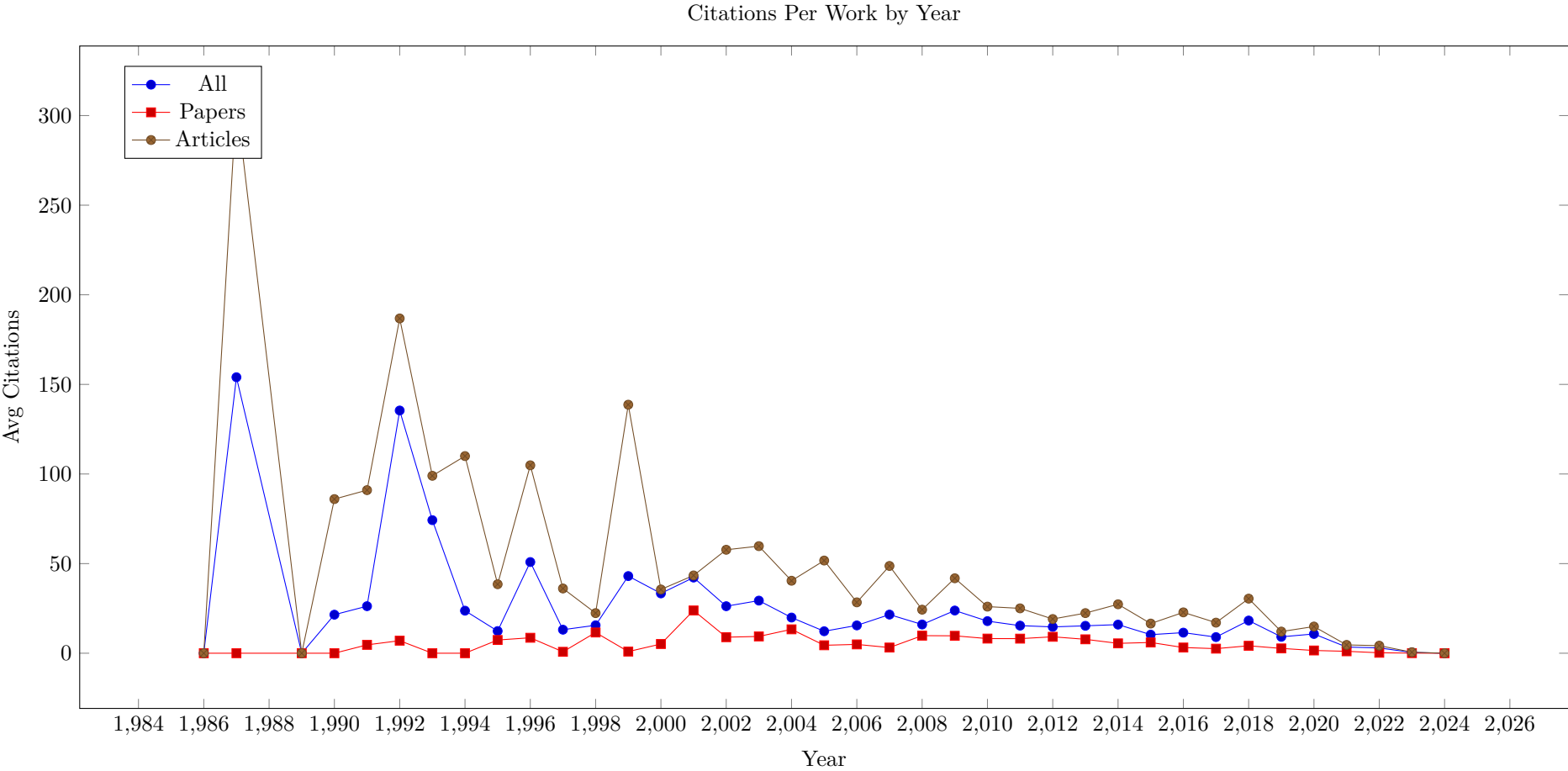




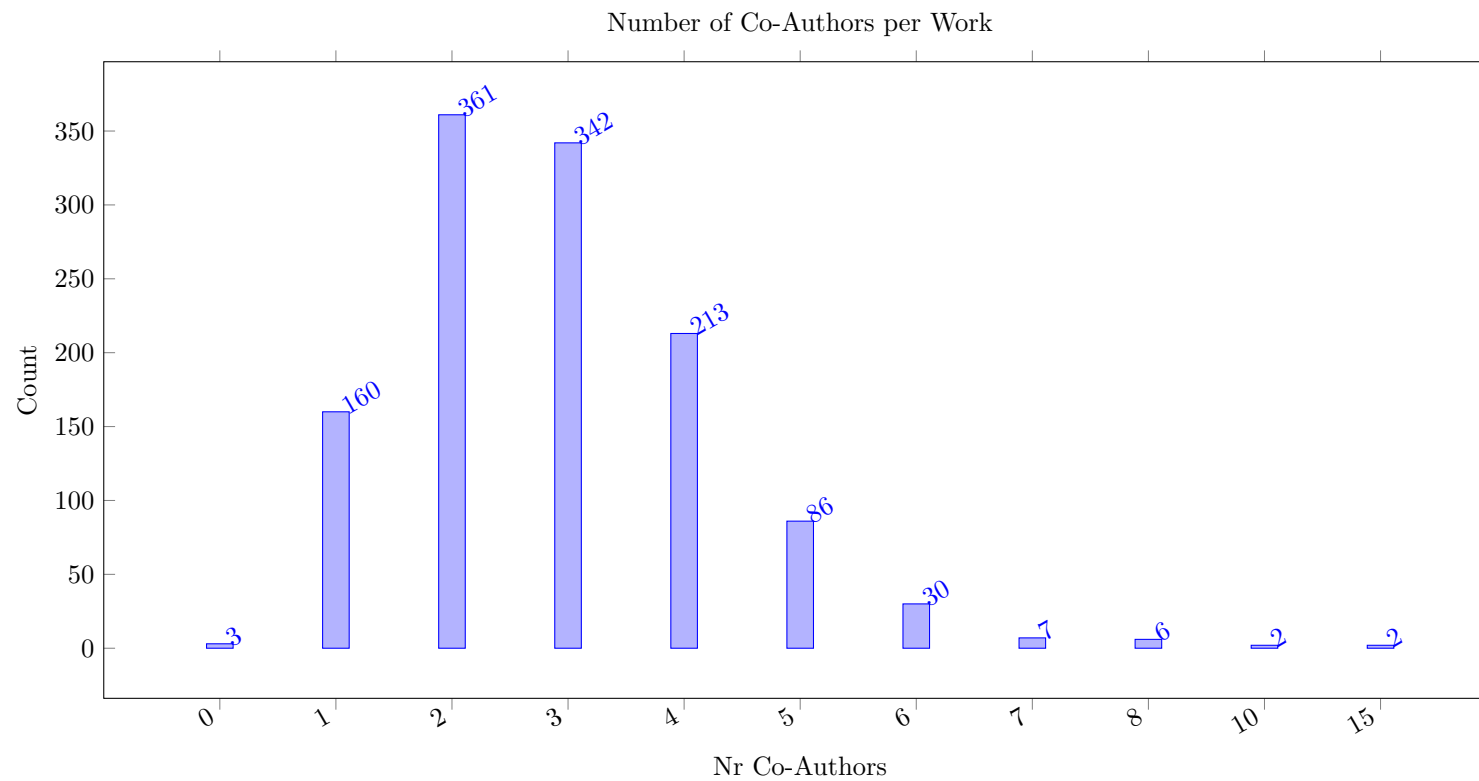
## 7.2 All Works



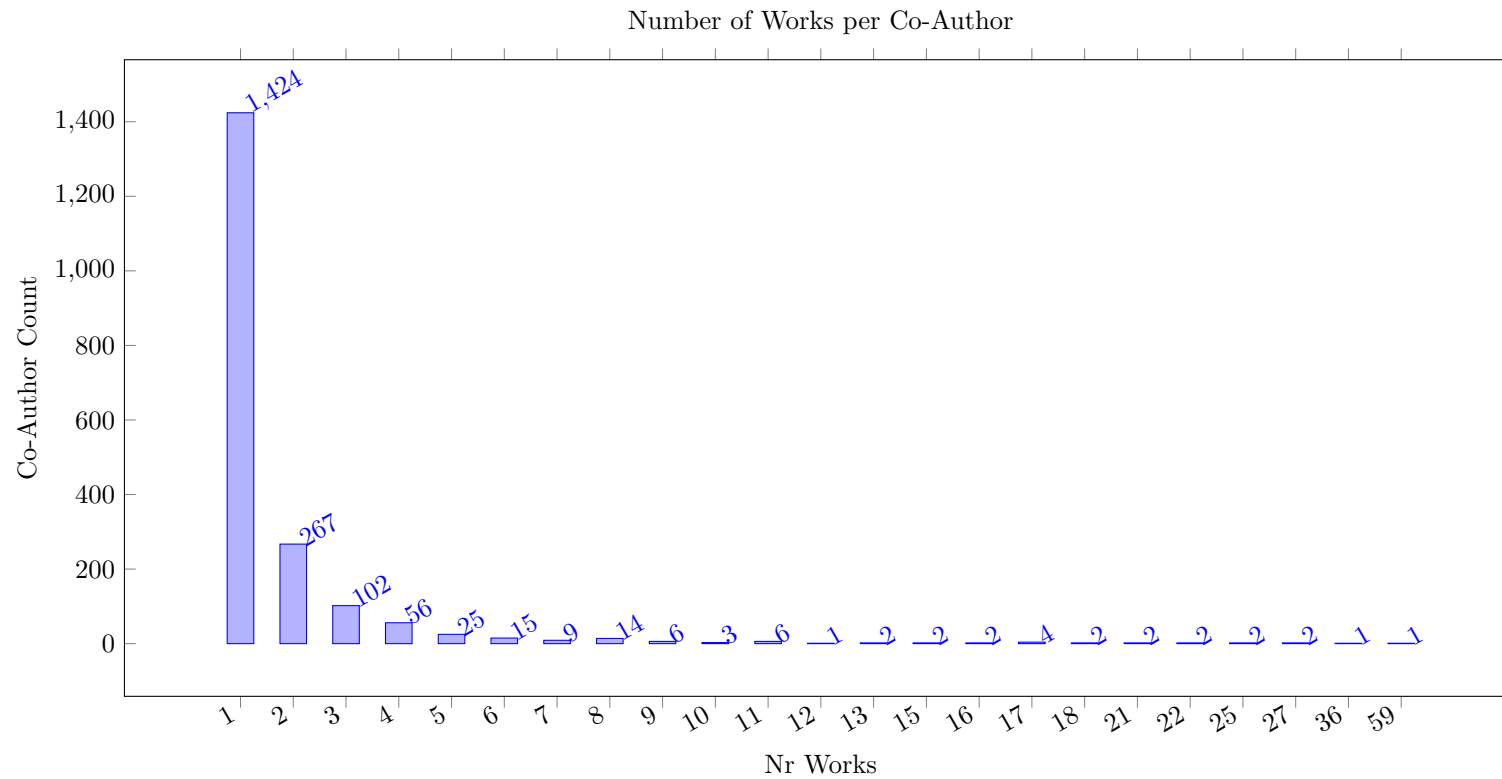




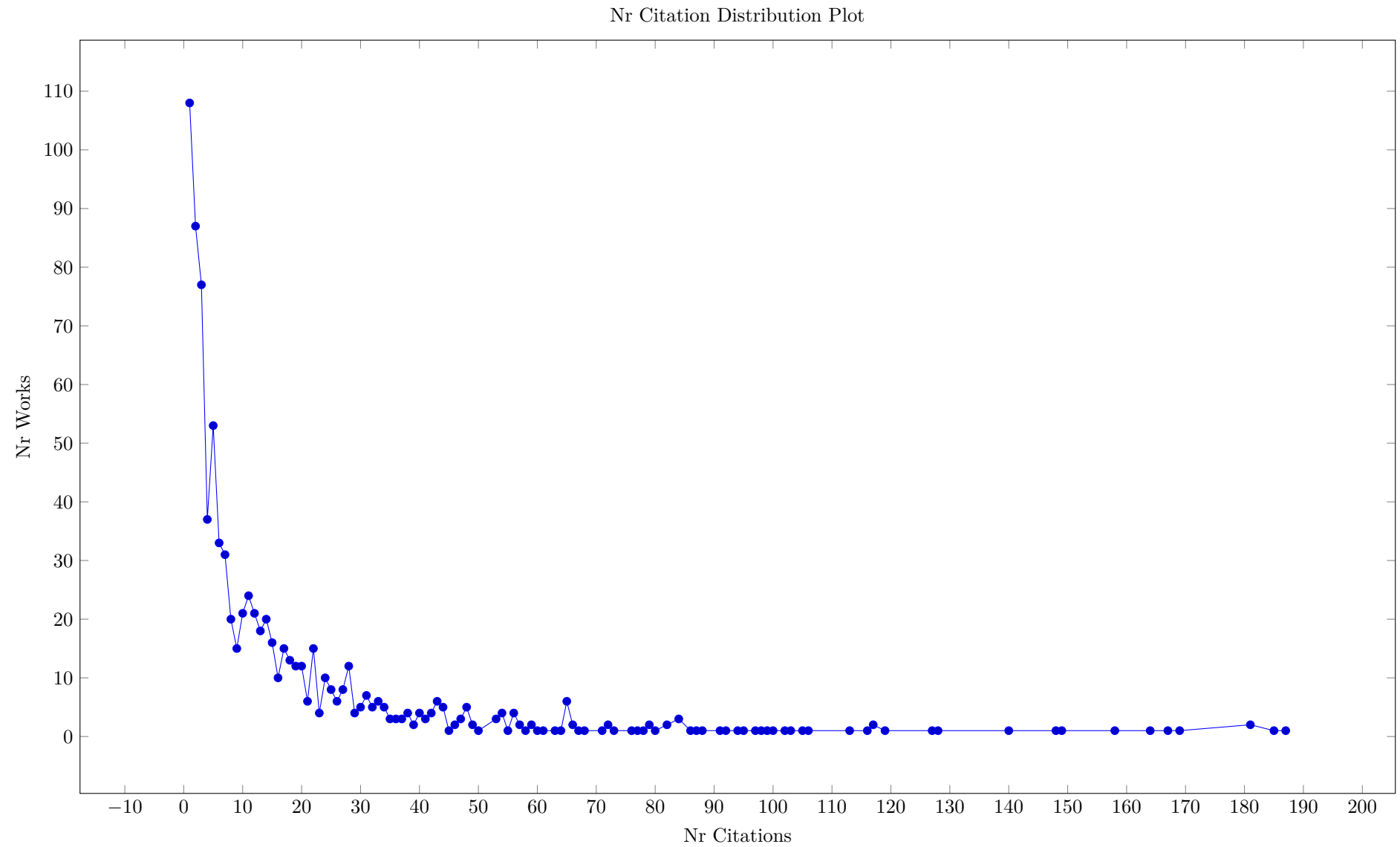
## 8 Number of Coauthors per Work



## 9 Number of Works per Author



## 10 Citation Distribution





## 11 Similarity Measures

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

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

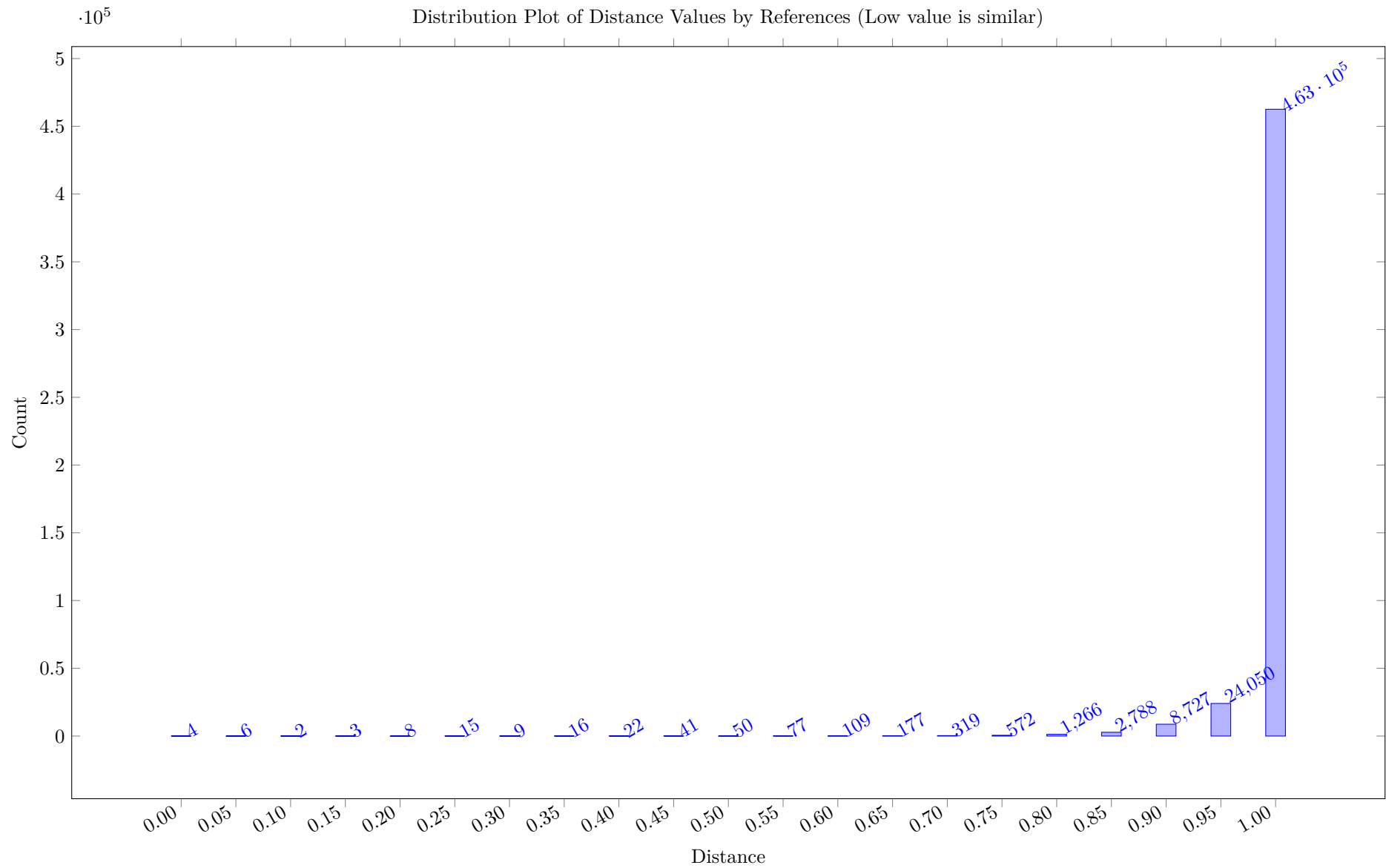
The vast majority of paper pairs has a distance close to one, as their references and citations do not overlap much.

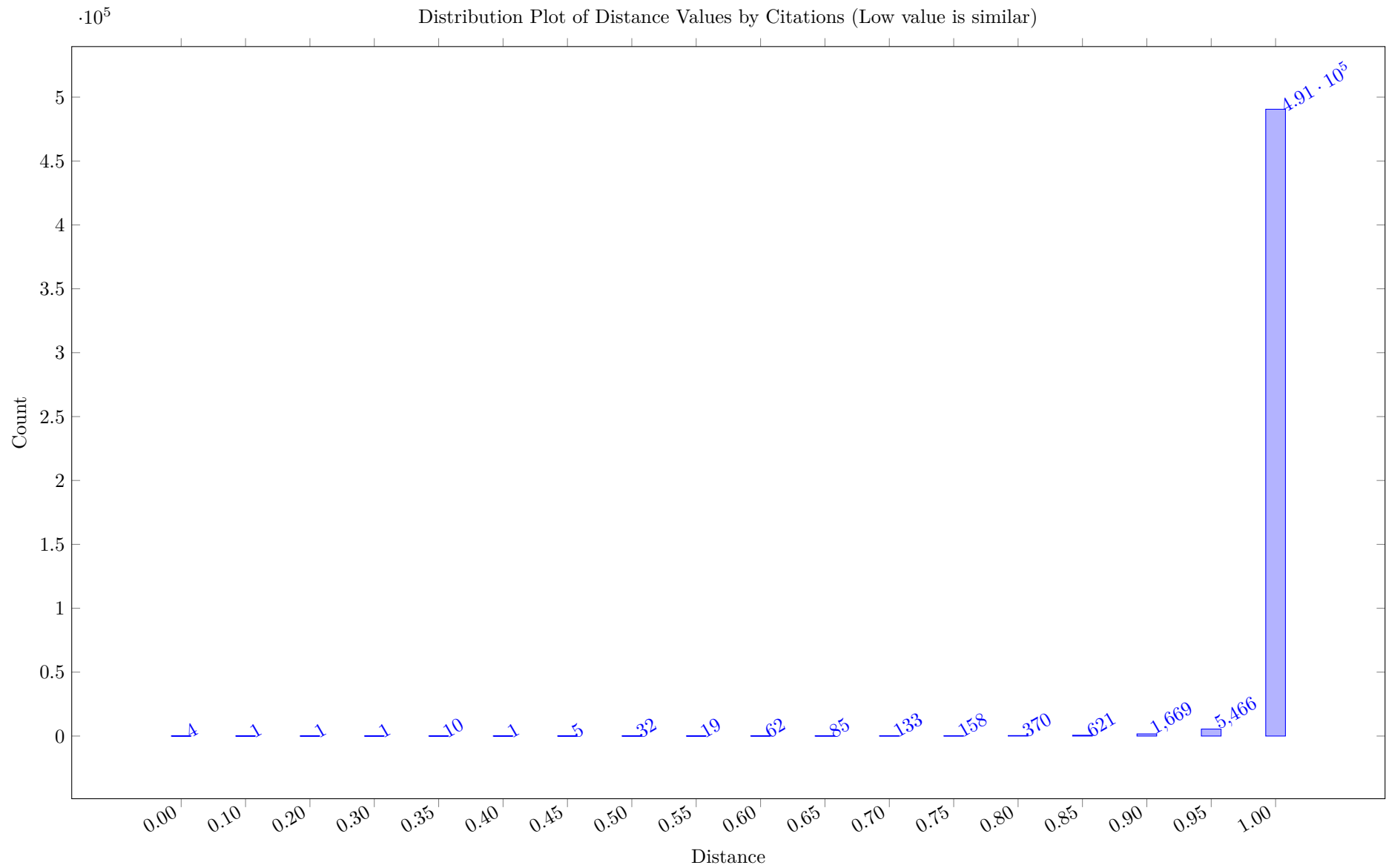
Table 11: Heat Map based on rounded DotProduct Similarity of Concepts (high = similar)

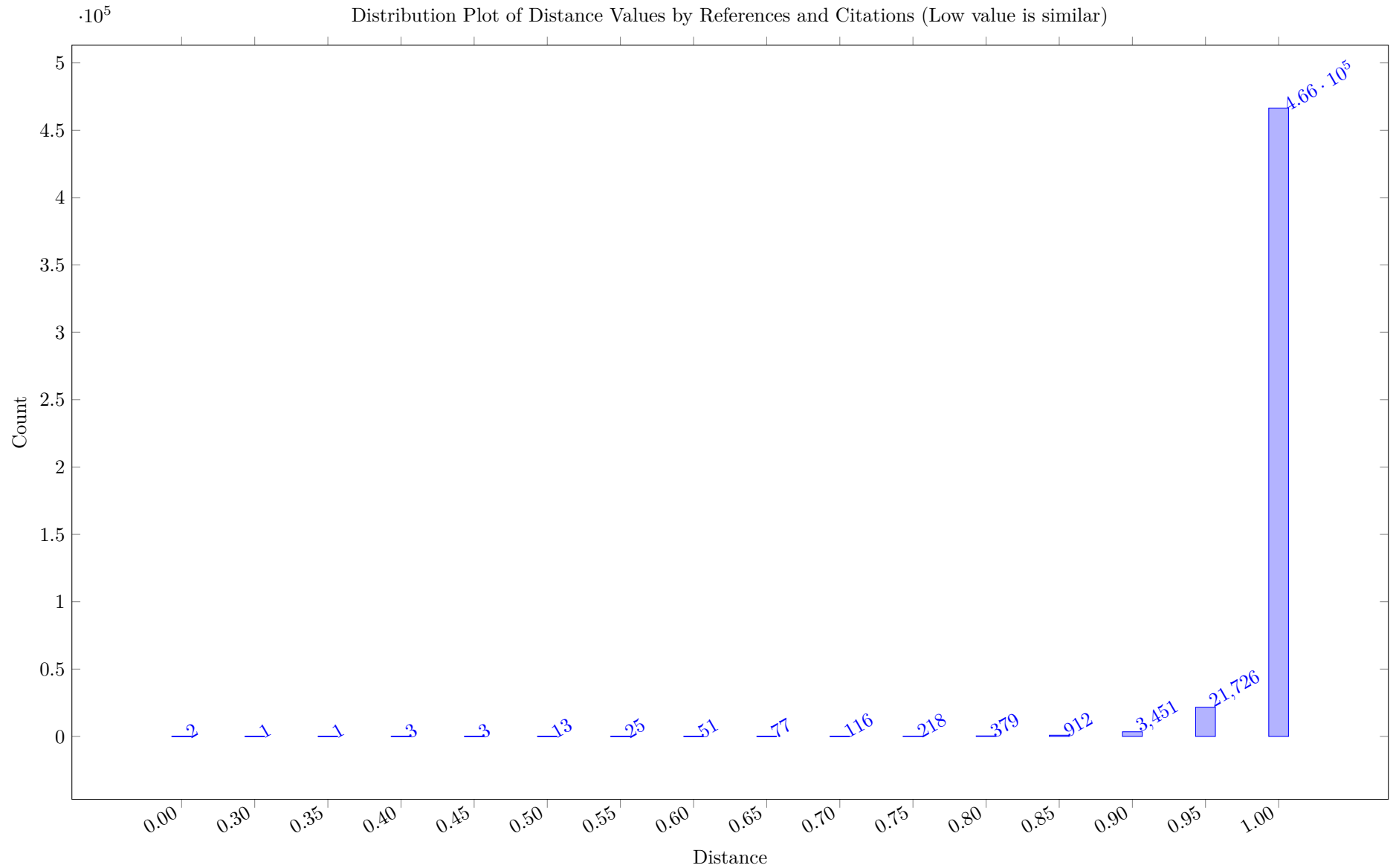
From/To	Total	2023																		
		ZarandiASC20	Schutti11	abs-1902-09244	YunusogluY22	ZhuSZW23	VilimLS15	Siala15a	abs-2211-14492	ZeballosNH11	abs-1911-04766	abs-2402-00459	ZhangBB22	YuraszeckMCCR23	ZeballosQH10	YuraszeckMPV22	ZeballosH05	abs-2305-19888	ZhouGL15	
Total		110744.00	82833.00	82290.00	82248.00	80066.00	79381.00	78432.00	77974.00	75577.00	74942.00	74451.00	73880.00	73220.00	71189.00	70989.00	69747.00	69475.00	69229.00	69003.00
Baptiste02	104649.00	330.00	266.00	173.00	201.00	169.00	172.00	226.00	161.00	172.00	148.00	135.00	159.00	163.00	149.00	193.00	137.00	144.00	147.00	159.00
Astrand21	103184.00	307.00	228.00	174.00	200.00	165.00	162.00	191.00	151.00	143.00	157.00	142.00	153.00	144.00	132.00	173.00	130.00	149.00	159.00	149.00
Beck99	94885.00	240.00	229.00	154.00	164.00	157.00	155.00	194.00	143.00	147.00	138.00	137.00	133.00	126.00	137.00	130.00	132.00	123.00	126.00	141.00
Dejemeppe16	89095.00	336.00	283.00	197.00	219.00	168.00	174.00	251.00	170.00	182.00	171.00	163.00	160.00	151.00	157.00	162.00	140.00	144.00	139.00	167.00
BartakSR10	89005.00	232.00	207.00	134.00	161.00	152.00	143.00	177.00	142.00	140.00	118.00	120.00	148.00	118.00	129.00	145.00	126.00	115.00	132.00	134.00
AwadMDMT22	84546.00	226.00	168.00	153.00	176.00	134.00	132.00	135.00	133.00	150.00	129.00	120.00	117.00	130.00	130.00	132.00	123.00	129.00	112.00	128.00
BeckDDF98	81986.00	223.00	160.00	146.00	158.00	136.00	124.00	161.00	126.00	145.00	111.00	115.00	116.00	110.00	127.00	115.00	130.00	98.00	110.00	112.00
AbreuN22	79734.00	229.00	146.00	137.00	167.00	142.00	124.00	128.00	137.00	104.00	108.00	124.00	116.00	134.00	111.00	161.00	105.00	133.00	126.00	117.00
AbreuPNF23	79220.00	232.00	155.00	146.00	176.00	135.00	114.00	125.00	124.00	113.00	105.00	123.00	108.00	125.00	107.00	161.00	105.00	126.00	123.00	118.00
AfsarVPG23	79208.00	190.00	137.00	138.00	144.00	128.00	121.00	125.00	132.00	108.00	118.00	117.00	110.00	121.00	117.00	133.00	107.00	102.00	104.00	111.00
AstrandJZ20	78095.00	181.00	153.00	131.00	131.00	122.00	127.00	150.00	108.00	110.00	109.00	102.00	122.00	114.00	101.00	119.00	102.00	105.00	115.00	99.00
ArtiguesLH13	76785.00	158.00	149.00	123.00	152.00	95.00	119.00	125.00	108.00	134.00	109.00	101.00	97.00	94.00	113.00	97.00	117.00	101.00	100.00	106.00
Groleaz21	75824.00	368.00	246.00	198.00	227.00	201.00	195.00	234.00	191.00	166.00	171.00	179.00	181.00	159.00	144.00	206.00	131.00	162.00	166.00	190.00
Fahimi16	74778.00	239.00	257.00	152.00	147.00	159.00	159.00	226.00	140.00	146.00	138.00	118.00	140.00	131.00	130.00	136.00	128.00	122.00	132.00	126.00
ArmstrongGOS21	74642.00	174.00	148.00	121.00	145.00	136.00	119.00	124.00	118.00	99.00	123.00	104.00	118.00	119.00	110.00	117.00	104.00	118.00	130.00	112.00
BartakSR08	74279.00	158.00	164.00	108.00	122.00	123.00	121.00	151.00	112.00	105.00	95.00	102.00	120.00	102.00	95.00	117.00	100.00	89.00	105.00	94.00
ColT22	74142.00	248.00	162.00	153.00	179.00	158.00	141.00	162.00	147.00	139.00	153.00	138.00	133.00	142.00	126.00	158.00	122.00	136.00	129.00	132.00
Caseau2001	73769.00	196.00	197.00	135.00	138.00	126.00	145.00	163.00	125.00	130.00	118.00	122.00	131.00	136.00	117.00	125.00	112.00	112.00	109.00	117.00
AbreuNP23	72190.00	203.00	131.00	131.00	157.00	137.00	116.00	119.00	124.00	102.00	94.00	107.00	112.00	126.00	100.00	150.00	92.00	125.00	119.00	102.00
Caballero19	72172.00	170.00	239.00	129.00	123.00	116.00	158.00	202.00	106.00	109.00	121.00	93.00	120.00	126.00	112.00	85.00	98.00	109.00	101.00	118.00
Akan2023	71610.00	240.00	152.00	142.00	135.00	102.00	111.00	105.00	109.00	109.00	100.00	109.00	88.00	107.00	104.00	103.00	106.00	91.00	103.00	130.00
BlazewiczDP96	71429.00	231.00	179.00	126.00	141.00	131.00	123.00	149.00	123.00	114.00	97.00	111.00	134.00	95.00	101.00	126.00	94.00	97.00	106.00	113.00
Godet21a	71182.00	256.00	263.00	155.00	166.00	154.00	177.00	248.00	157.00	132.00	159.00	130.00	149.00	158.00	130.00	147.00	124.00	130.00	133.00	155.00
BajestaniB13	70809.00	181.00	120.00	115.00	128.00	117.00	110.00	110.00	102.00	114.00	89.00	100.00	96.00	86.00	89.00	99.00	86.00	86.00	88.00	105.00
AbreuAPNM21	70316.00	208.00	128.00	121.00	147.00	127.00	103.00	114.00	119.00	89.00	90.00	113.00	107.00	121.00	96.00	152.00	86.00	111.00	111.00	110.00
BidotVLB09	69739.00	190.00	140.00	134.00	139.00	110.00	122.00	134.00	105.00	126.00	102.00	101.00	106.00	113.00	114.00	114.00	115.00	90.00	97.00	95.00
BeckF98	69295.00	177.00	142.00	115.00	122.00	122.00	113.00	142.00	109.00	100.00	102.00	108.00	97.00	100.00	97.00	96.00	99.00	91.00	86.00	109.00
AlfieriGPS23	68999.00	190.00	118.00	132.00	141.00	116.00	99.00	107.00	116.00	102.00	82.00	114.00	109.00	110.00	90.00	130.00	97.00	94.00	105.00	97.00
Artigues2011	68850.00	136.00	156.00	102.00	98.00	109.00	127.00	146.00	99.00	91.00	75.00	89.00	122.00	100.00	84.00	95.00	83.00	76.00	87.00	87.00
ArkhipovBL19	68801.00	137.00	166.00	104.00	105.00	97.00	135.00	121.00	92.00	89.00	97.00	87.00	103.00	108.00	87.00	80.00	78.00	89.00	83.00	97.00
Banaszak2014	68601.00	155.00	124.00	96.00	97.00	109.00	105.00	123.00	97.00	105.00	87.00	81.00	93.00	88.00	97.00	94.00	106.00	84.00	97.00	88.00
BosiM2001	67641.00	156.00	162.00	110.00	131.00	111.00	137.00	158.00	115.00	114.00	100.00	105.00	126.00	112.00	105.00	106.00	95.00	98.00	108.00	101.00
Brucker2002	67545.00	196.00	180.00	132.00	138.00	130.00	152.00	156.00	119.00	120.00	100.00	106.00	129.00	129.00	101.00	115.00	93.00	108.00	102.00	119.00
BeckF00	67504.00	146.00	167.00	108.00	105.00	110.00	117.00	156.00	99.00	106.00	93.00	84.00	107.00	91.00	92.00	92.00	94.00	76.00	76.00	79.00
Braune2022	66573.00	146.00	165.00	125.00	133.00	128.00	131.00	136.00	115.00	116.00	112.00	104.00	118.00	118.00	105.00	100.00	103.00	109.00	102.00	110.00
BonninMNE24	66444.00	172.00	159.00	113.00	122.00	112.00	119.00	130.00	104.00	98.00	110.00	99.00	112.00	106.00	99.00	131.00	99.00	101.00	95.00	109.00
BeckR03	65546.00	156.00	132.00	131.00	127.00	115.00	119.00	134.00	111.00	129.00	93.00	100.00	103.00	90.00	107.00	97.00	106.00	72.00	85.00	87.00
ChenGPSH10	65321.00	163.00	164.00	101.00	109.00	121.00	127.00	149.00	110.00	120.00	96.00	96.00	113.00	97.00	102.00	106.00	102.00	82.00	94.00	92.00
BeckPS03	65316.00	151.00	138.00	122.00	120.00	106.00	116.00	131.00	104.00	115.00	91.00	92.00	99.00	105.00	101.00	96.00	107.00	86.00	93.00	85.00
Bit-Monnot23	65093.00	135.00	154.00	106.00	99.00	120.00	129.00	177.00	105.00	94.00	103.00	98.00	121.00	105.00	86.00	105.00	91.00	86.00	89.00	95.00
AntuoriHHEN20	64947.00	134.00	121.00	104.00	100.00	82.00	95.00	113.00	109.00	94.00	86.00	99.00	90.00	78.00	82.00	83.00	87.00	68.00	74.00	77.00
Benedetti2008	64774.00	138.00	140.00	102.00	103.00	103.00	111.00	130.00	98.00	102.00	94.00	88.00	94.00	97.00	95.00	81.00	96.00	88.00	95.00	95.00
Other		102310.00	75638.00	76761.00	76255.00	74675.00	73882.00	71994.00	72859.00	70554.00	70250.00	69775.00	68870.00	68335.00	66581.00	65826.00	65259.00	65020.00	64636.00	64236.00

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

From/To Total	Total	ZeballosM09	ZeballosH05	abs-2312-13682	abs-1901-07914	VilimLS15	ZhangYW21	Xujun2009	ZeballosQH10	ZouZ20	Zhang2005	abs-1902-09244	Wolf05	ZhangBB22	abs-2211-14492	ZeballosNH11	WatsonB08	abs-2306-05747	abs-2305-19888	ZibranR11a	ZhouCL15	WikarekS19	VilimBC05	Other
		542.33	541.31	528.85	527.08	523.75	523.46	520.98	519.37	518.83	518.20	515.43	511.90	510.44	510.30	509.75	508.09	507.99	507.78	507.35	502.25	502.08	500.98	
Banaszak2014	541.96	0.77	0.76	0.59	0.67	0.65	0.63	0.76	0.66	0.62	0.66	0.56	0.68	0.60	0.59	0.66	0.64	0.57	0.57	0.60	0.65	0.65	0.67	527.74
Banaszak2008	538.67	0.80	0.77	0.60	0.70	0.64	0.59	0.80	0.70	0.59	0.67	0.56	0.71	0.59	0.62	0.66	0.67	0.59	0.56	0.62	0.63	0.64	0.67	524.29
Bartak02a	534.63	0.62	0.66	0.60	0.65	0.70	0.61	0.68	0.62	0.59	0.70	0.57	0.66	0.61	0.59	0.59	0.63	0.57	0.53	0.50	0.56	0.67	0.70	521.01
BartakSR08	533.15	0.60	0.66	0.57	0.60	0.68	0.63	0.70	0.59	0.56	0.80	0.58	0.70	0.71	0.63	0.60	0.67	0.59	0.56	0.52	0.65	0.70	0.76	519.09
AfsarVPG23	522.24	0.62	0.65	0.54	0.53	0.63	0.74	0.56	0.68	0.59	0.52	0.69	0.62	0.61	0.69	0.58	0.69	0.67	0.59	0.50	0.60	0.55	0.58	508.83
AstrandJZ20	522.20	0.61	0.63	0.61	0.56	0.67	0.67	0.67	0.59	0.53	0.57	0.66	0.62	0.68	0.57	0.59	0.67	0.64	0.62	0.52	0.67	0.63	0.68	508.57
BeckPS03	522.15	0.73	0.78	0.57	0.64	0.73	0.68	0.72	0.70	0.55	0.70	0.73	0.74	0.66	0.65	0.74	0.73	0.64	0.60	0.49	0.64	0.72	0.71	507.29
ArkipovBL19	514.11	0.54	0.54	0.51	0.53	0.80	0.65	0.55	0.57	0.49	0.63	0.59	0.71	0.64	0.54	0.54	0.60	0.55	0.59	0.41	0.54	0.72	0.63	501.28
AstrandJZ18	512.79	0.67	0.66	0.69	0.69	0.62	0.52	0.69	0.64	0.56	0.54	0.52	0.60	0.53	0.51	0.53	0.56	0.51	0.55	0.64	0.56	0.54	0.59	499.87
Benedetti2008	510.00	0.66	0.69	0.60	0.61	0.68	0.64	0.71	0.65	0.59	0.75	0.60	0.78	0.61	0.60	0.64	0.64	0.61	0.60	0.50	0.64	0.66	0.70	495.83
AngelsmarkJ00	507.33	0.63	0.53	0.48	0.60	0.58	0.48	0.64	0.49	0.50	0.68	0.39	0.60	0.51	0.52	0.56	0.56	0.47	0.44	0.54	0.54	0.57	0.53	495.48
Beck07	505.69	0.64	0.64	0.56	0.56	0.73	0.71	0.73	0.58	0.55	0.64	0.64	0.68	0.73	0.67	0.61	0.85	0.68	0.52	0.60	0.60	0.65	0.68	491.47
ArtiguesLH13	505.47	0.68	0.71	0.58	0.52	0.62	0.49	0.66	0.65	0.57	0.68	0.61	0.63	0.53	0.56	0.71	0.52	0.49	0.58	0.59	0.57	0.53	0.60	492.41
Astrand0F21	505.09	0.57	0.64	0.64	0.64	0.65	0.68	0.59	0.59	0.49	0.50	0.56	0.59	0.66	0.55	0.51	0.64	0.63	0.59	0.46	0.54	0.63	0.63	492.09
AalianPG23	498.25	0.62	0.59	0.73	0.59	0.59	0.54	0.63	0.59	0.56	0.47	0.58	0.56	0.52	0.44	0.48	0.55	0.56	0.61	0.61	0.50	0.49	0.56	485.88
AbidinK20	498.12	0.55	0.55	0.56	0.50	0.52	0.58	0.42	0.60	0.70	0.41	0.56	0.45	0.51	0.49	0.56	0.51	0.46	0.51	0.64	0.46	0.49	0.51	486.60
Astrand2020	498.09	0.57	0.70	0.64	0.62	0.59	0.67	0.66	0.62	0.53	0.54	0.57	0.64	0.61	0.51	0.54	0.61	0.58	0.59	0.53	0.53	0.63	0.64	484.98
BeckDDF98	497.94	0.72	0.73	0.57	0.63	0.59	0.63	0.67	0.67	0.55	0.73	0.67	0.61	0.58	0.60	0.71	0.62	0.57	0.52	0.56	0.58	0.65	0.65	484.15
Bartak02	494.57	0.67	0.59	0.53	0.59	0.60	0.47	0.69	0.53	0.55	0.70	0.45	0.59	0.51	0.49	0.60	0.51	0.44	0.44	0.56	0.51	0.66	0.65	482.24
BeckFW11	494.06	0.61	0.62	0.63	0.60	0.74	0.72	0.67	0.63	0.47	0.59	0.62	0.70	0.75	0.72	0.55	0.93	0.77	0.62	0.53	0.62	0.69	0.65	479.64
Alaka21	492.87	0.53	0.60	0.56	0.57	0.52	0.63	0.53	0.60	0.68	0.47	0.53	0.51	0.53	0.49	0.46	0.48	0.48	0.55	0.52	0.54	0.50	0.54	481.06
AwadMDMT22	491.04	0.61	0.66	0.53	0.47	0.61	0.65	0.55	0.66	0.58	0.59	0.68	0.68	0.57	0.61	0.71	0.58	0.58	0.66	0.51	0.57	0.56	0.60	477.82
Balducci2017	490.24	0.58	0.55	0.52	0.58	0.61	0.48	0.62	0.47	0.54	0.61	0.47	0.54	0.49	0.54	0.54	0.58	0.50	0.46	0.50	0.55	0.60	0.55	478.35
Artigues2011	486.66	0.53	0.54	0.44	0.51	0.71	0.63	0.57	0.52	0.42	0.62	0.55	0.63	0.72	0.55	0.52	0.63	0.53	0.47	0.38	0.54	0.70	0.70	474.25
BartakSR10	486.26	0.58	0.64	0.47	0.60	0.62	0.60	0.58	0.62	0.51	0.77	0.56	0.70	0.68	0.61	0.62	0.59	0.54	0.55	0.44	0.63	0.68	0.69	472.98
AkramNHRSA23	485.85	0.54	0.56	0.57	0.63	0.55	0.62	0.56	0.55	0.57	0.52	0.47	0.57	0.50	0.63	0.43	0.59	0.58	0.59	0.57	0.58	0.43	0.46	473.80
Astrand21	485.82	0.54	0.57	0.53	0.49	0.61	0.61	0.54	0.55	0.51	0.52	0.63	0.55	0.61	0.56	0.55	0.57	0.57	0.62	0.47	0.66	0.55	0.61	473.39
Adelgren2023	482.67	0.52	0.53	0.56	0.54	0.54	0.57	0.55	0.51	0.46	0.54	0.48	0.60	0.57	0.53	0.52	0.56	0.53	0.65	0.41	0.56	0.55	0.51	470.88
AlesioBNG15	482.00	0.55	0.53	0.51	0.56	0.54	0.60	0.50	0.56	0.66	0.54	0.48	0.58	0.51	0.53	0.54	0.55	0.52	0.56	0.64	0.56	0.49	0.48	470.02
AlakaP23	481.90	0.52	0.55	0.51	0.61	0.51	0.63	0.53	0.58	0.67	0.47	0.51	0.45	0.50	0.45	0.49	0.45	0.43	0.51	0.52	0.49	0.53	0.51	470.48
BockmayrP06	481.05	0.70	0.65	0.73	0.70	0.65	0.49	0.62	0.64	0.56	0.63	0.55	0.60	0.54	0.54	0.58	0.59	0.55	0.60	0.61	0.60	0.58	0.58	467.76
Bocewicz2009	480.90	0.70	0.72	0.54	0.65	0.64	0.59	0.71	0.61	0.59	0.67	0.54	0.74	0.60	0.55	0.66	0.64	0.56	0.54	0.59	0.58	0.67	0.71	467.09
Beck99	480.39	0.60	0.62	0.51	0.57	0.62	0.64	0.57	0.60	0.55	0.71	0.59	0.65	0.56	0.57	0.60	0.63	0.56	0.55	0.50	0.55	0.60	0.69	467.34
Beck06	478.23	0.61	0.65	0.57	0.59	0.64	0.63	0.70	0.56	0.40	0.61	0.61	0.65	0.67	0.67	0.60	0.84	0.66	0.49	0.47	0.64	0.68	0.61	464.67
BeckF00a	477.21	0.66	0.61	0.49	0.56	0.64	0.54	0.69	0.56	0.52	0.73	0.49	0.70	0.56	0.52	0.60	0.63	0.51	0.46	0.52	0.55	0.64	0.80	464.22
BeckF98	476.18	0.55	0.62	0.46	0.60	0.61	0.68	0.57	0.58	0.51	0.70	0.59	0.66	0.55	0.59	0.55	0.60	0.58	0.55	0.42	0.51	0.63	0.66	463.41
BeniniLMR11	473.80	0.65	0.66	0.62	0.61	0.65	0.56	0.61	0.64	0.65	0.58	0.57	0.62	0.56	0.52	0.63	0.56	0.53	0.58	0.58	0.49	0.56	0.60	460.77
BenderWS21	473.71	0.68	0.69	0.70	0.68	0.65	0.66	0.74	0.65	0.61	0.56	0.63	0.65	0.53	0.52	0.57	0.63	0.59	0.70	0.63	0.56	0.60	0.58	459.88
CarchraeB09	471.97	0.69	0.68	0.71	0.67	0.80	0.70	0.71	0.64	0.53	0.63	0.65	0.73	0.75	0.71	0.65	0.85	0.76	0.61	0.54	0.62	0.67	0.67	456.99
Alesio2013	471.12	0.57	0.56	0.52	0.57	0.52	0.55	0.50	0.58	0.57	0.58	0.45	0.64	0.51	0.52	0.53	0.55	0.53	0.57	0.61	0.56	0.49	0.47	459.17
AbreuN22	471.05	0.48	0.58	0.56	0.48	0.59	0.66	0.45	0.58	0.50	0.39	0.62	0.54	0.58	0.64	0.50	0.62	0.63	0.70	0.41	0.65	0.55	0.51	458.83
BeckR03	470.41	0.64	0.70	0.48	0.46	0.67	0.65	0.67	0.67	0.59	0.66	0.71	0.61	0.61	0.62	0.74	0.66	0.56	0.45	0.58	0.53	0.59	0.63	456.95
Other		516.44	514.74	504.98	502.34	497.21	497.78	494.71	494.13	495.52	492.66	491.36	485.43	485.60	486.29	485.19	481.91	484.10	484.13	485.01	478.14	476.76	475.06	

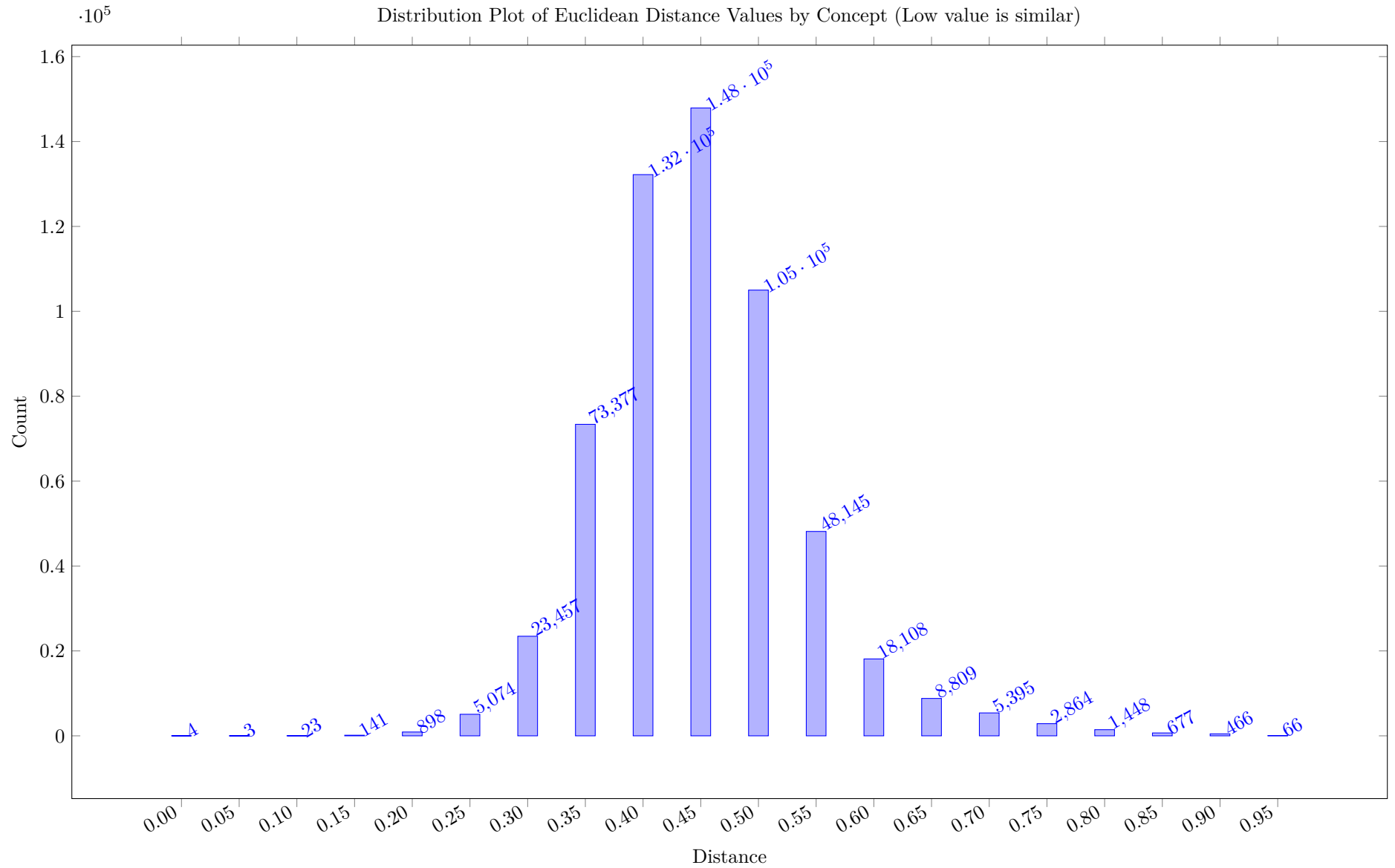




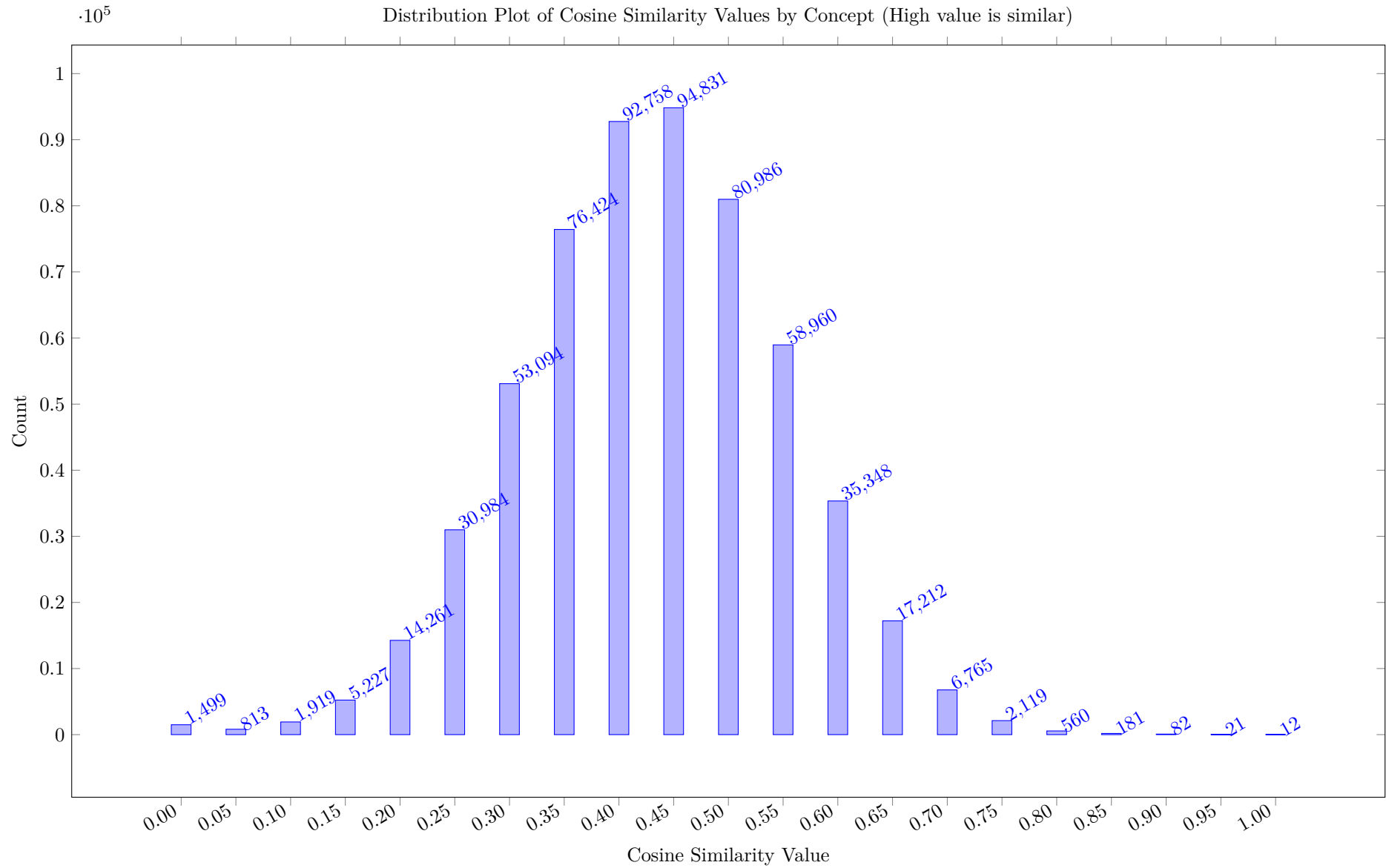


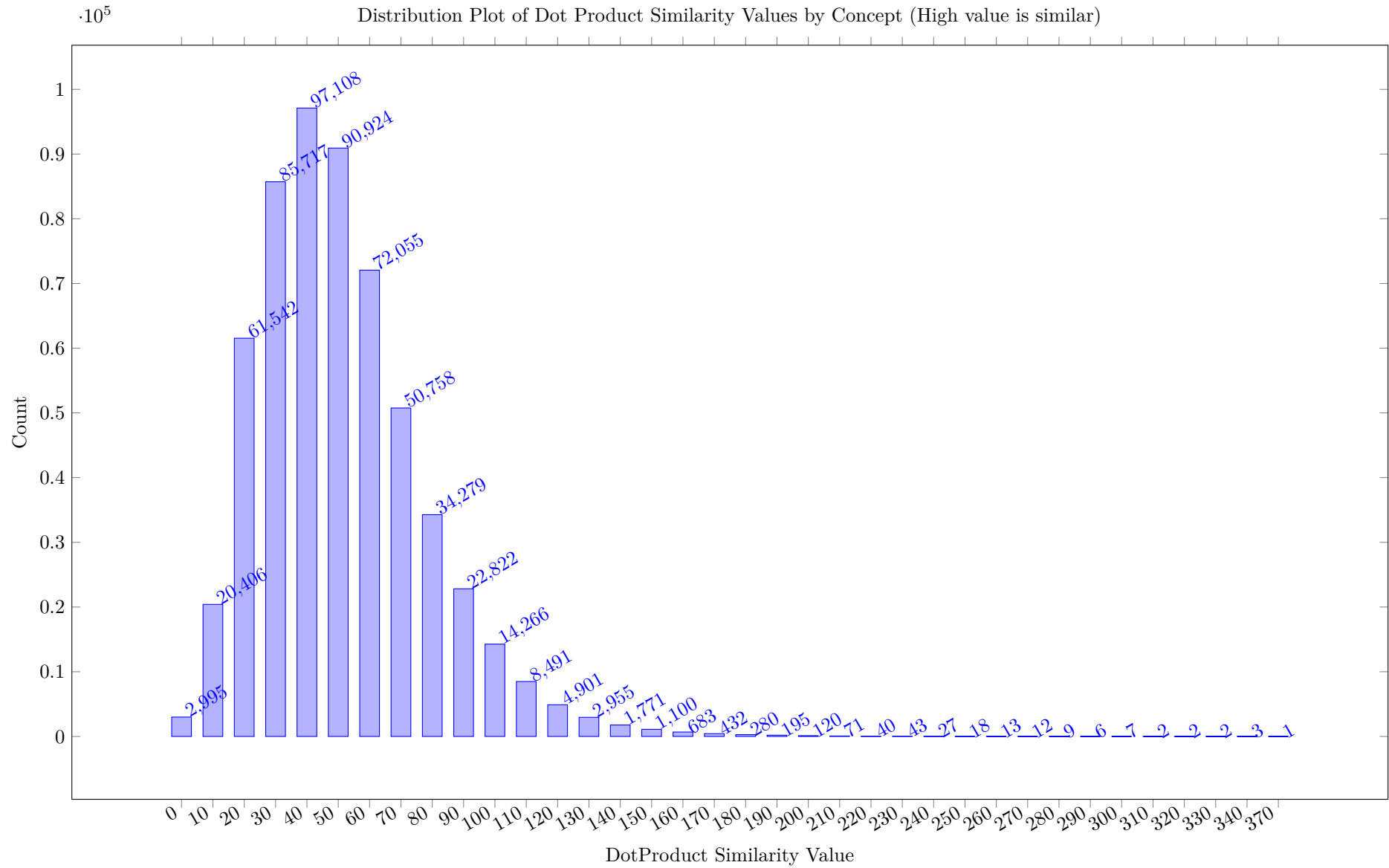
The similarity by concept uses the Euclidean distance between the feature vectors for two works. We translate the MatchLevel for each Concept into a linear

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.





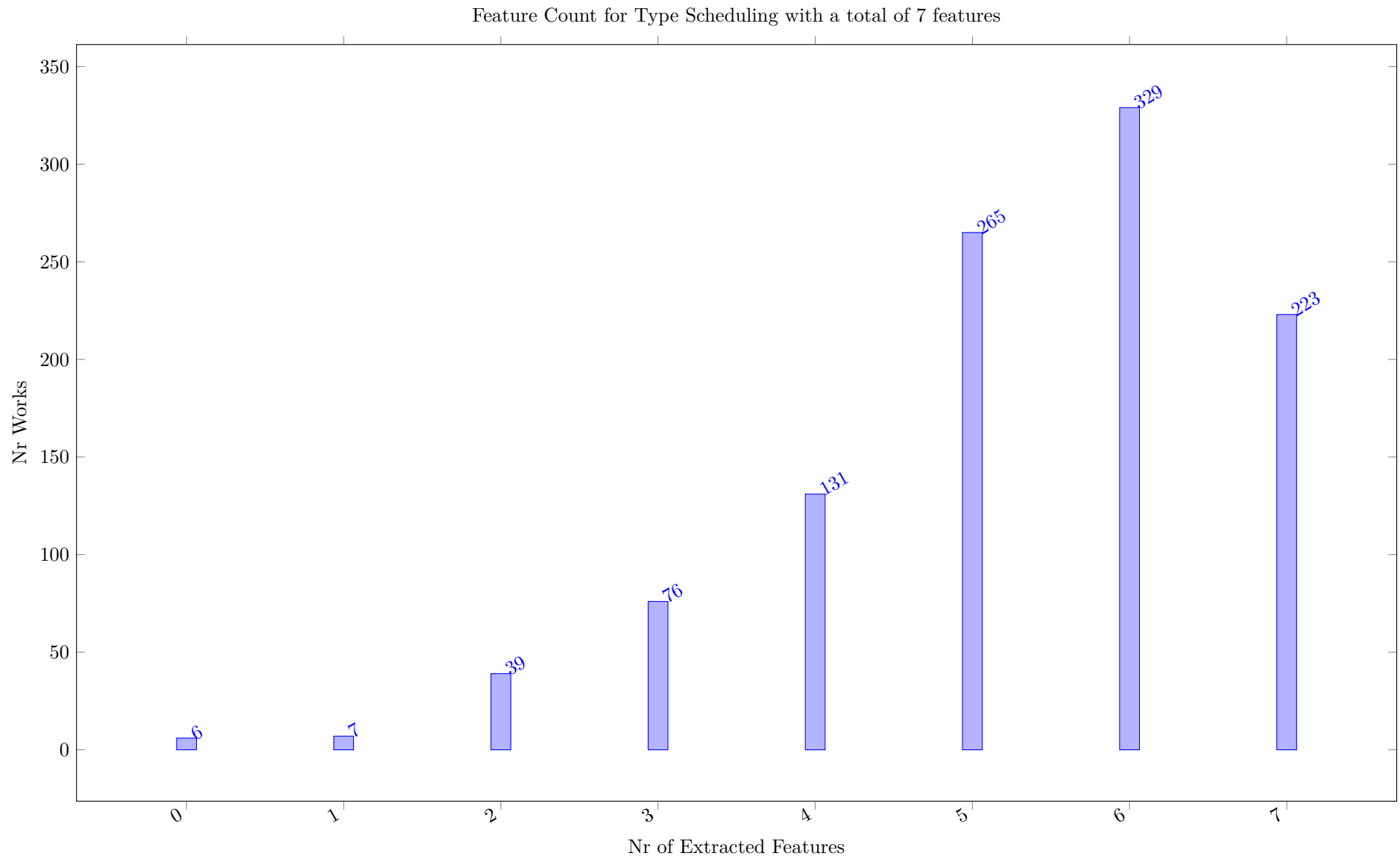


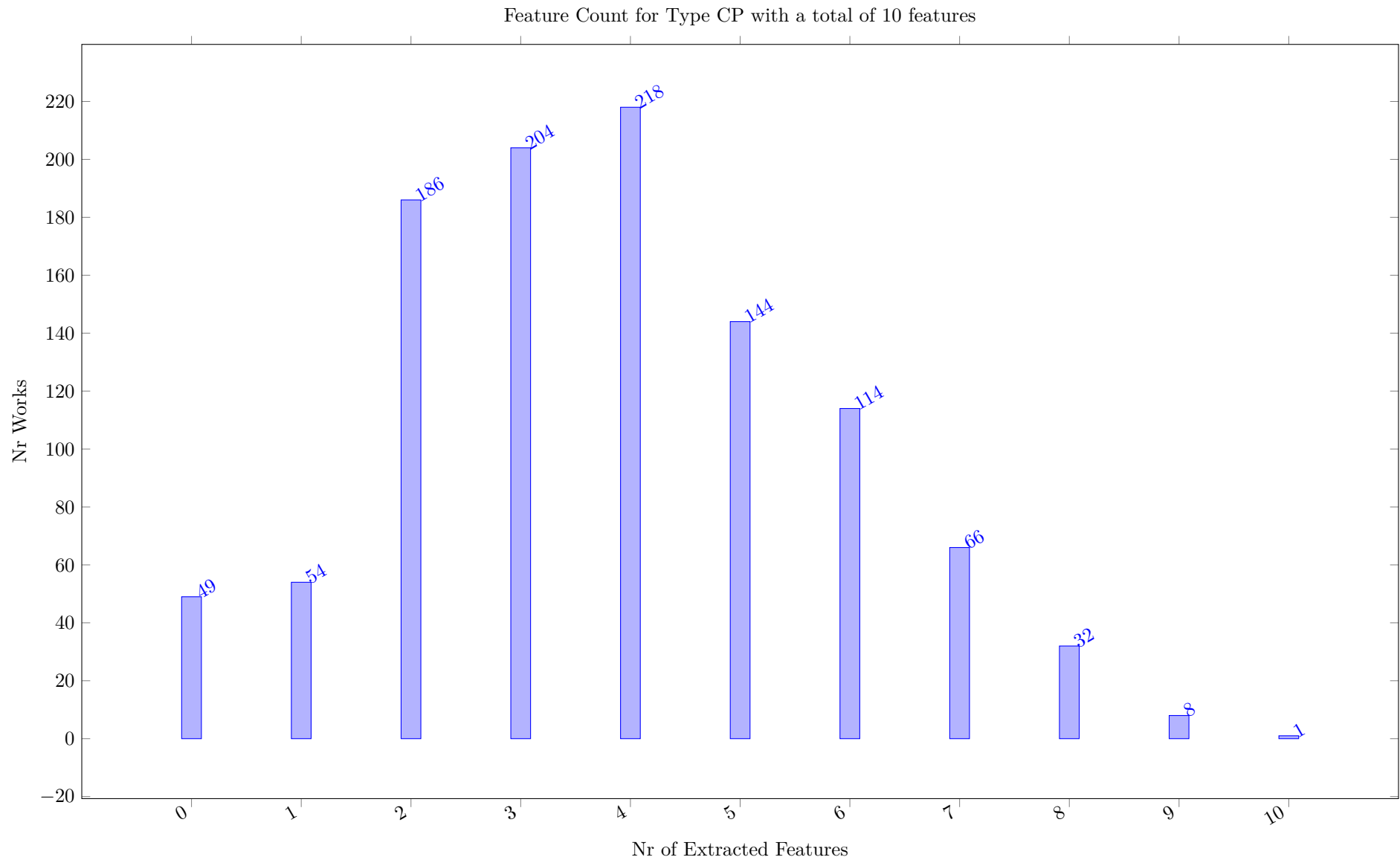


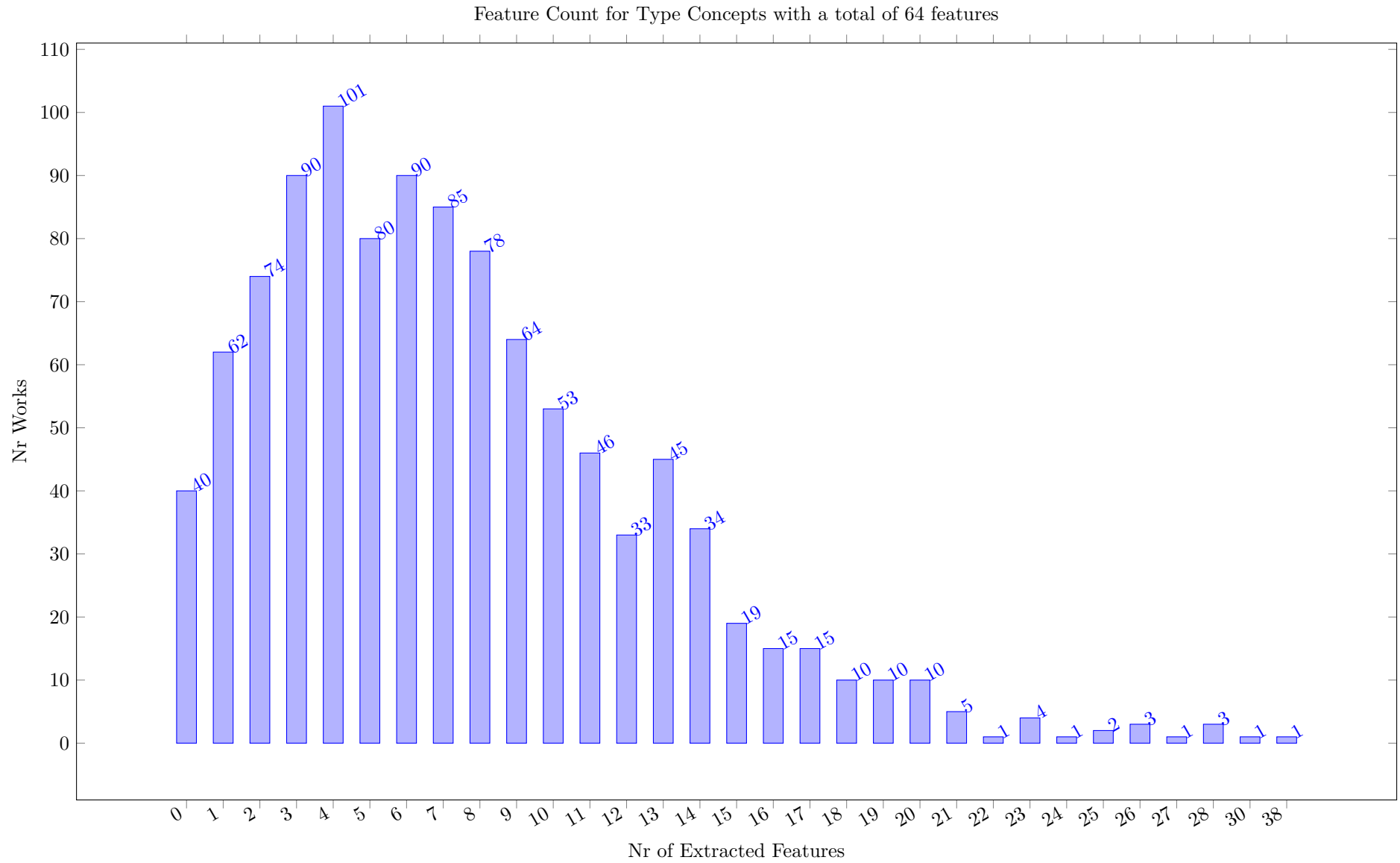
## 12 Concept Distribution

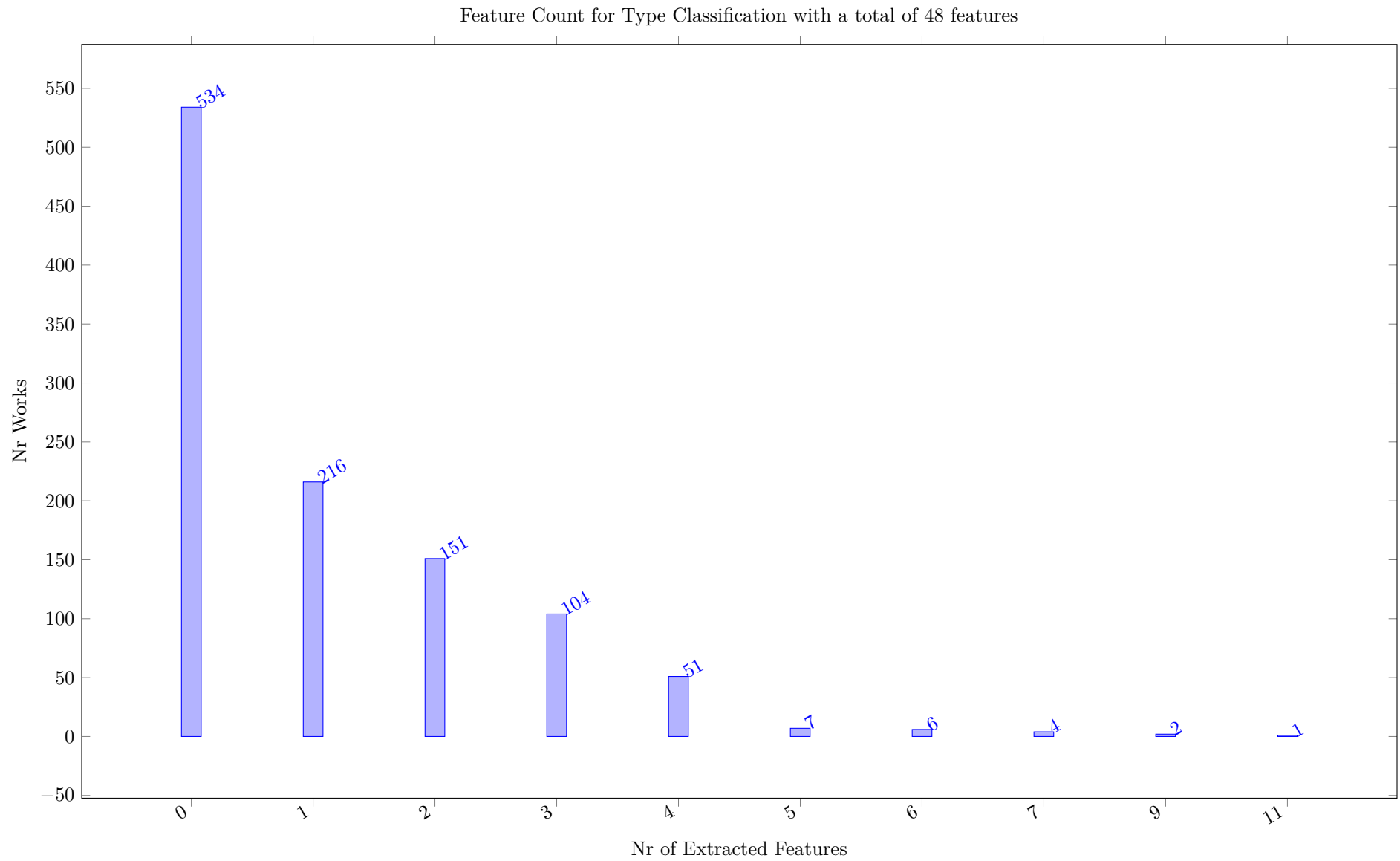
For each concept type, we count how many features are extracted by the individual works that do have a local copy, e.g. for which we can extract features. We can compare the number of features extracted to the number of concepts of a given type, which is stated in the title of the diagram.

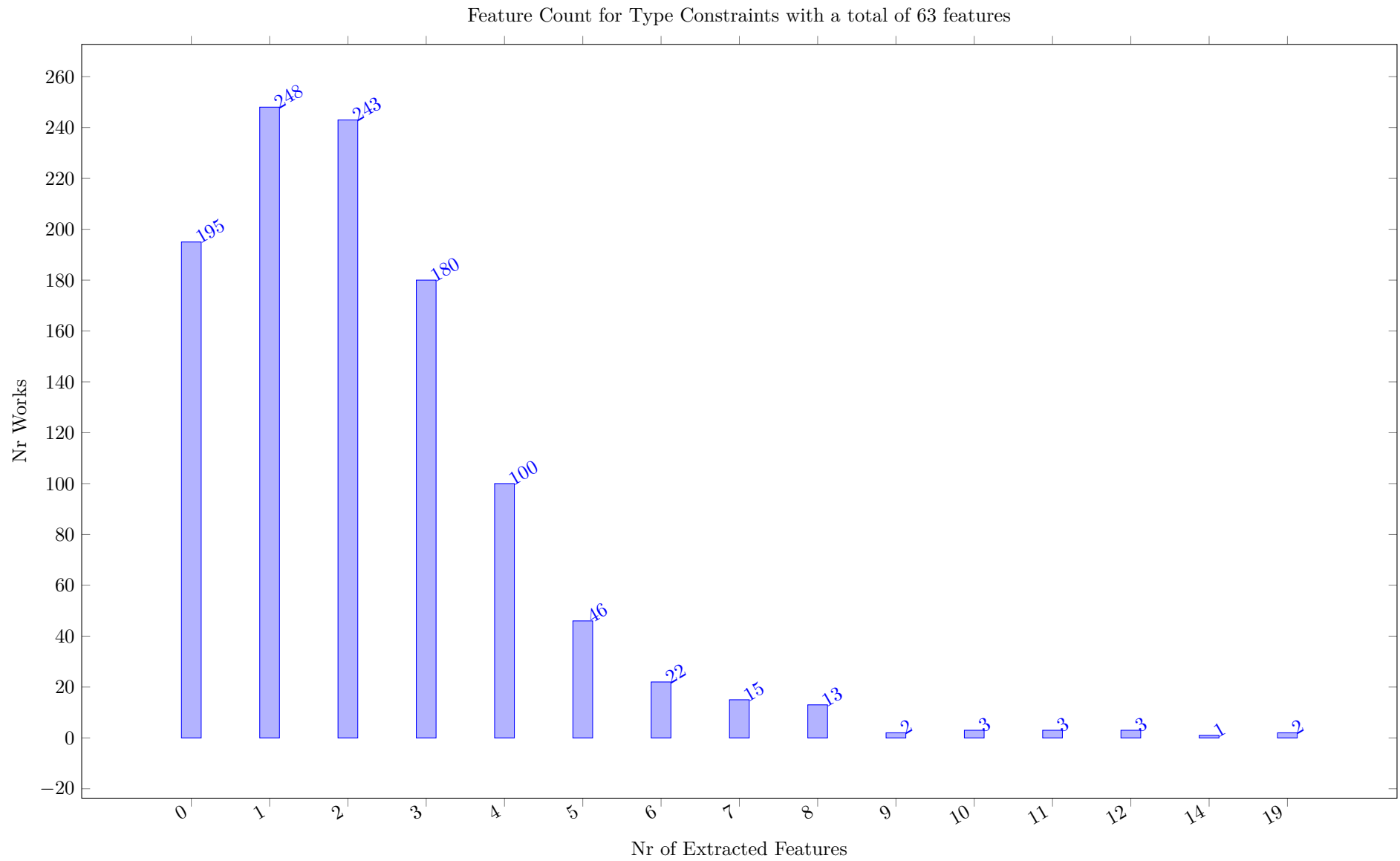
A high count indicates that a work covers many of the concepts of the given type, a low count might mean that our ontology does not have relevant concepts for that work.



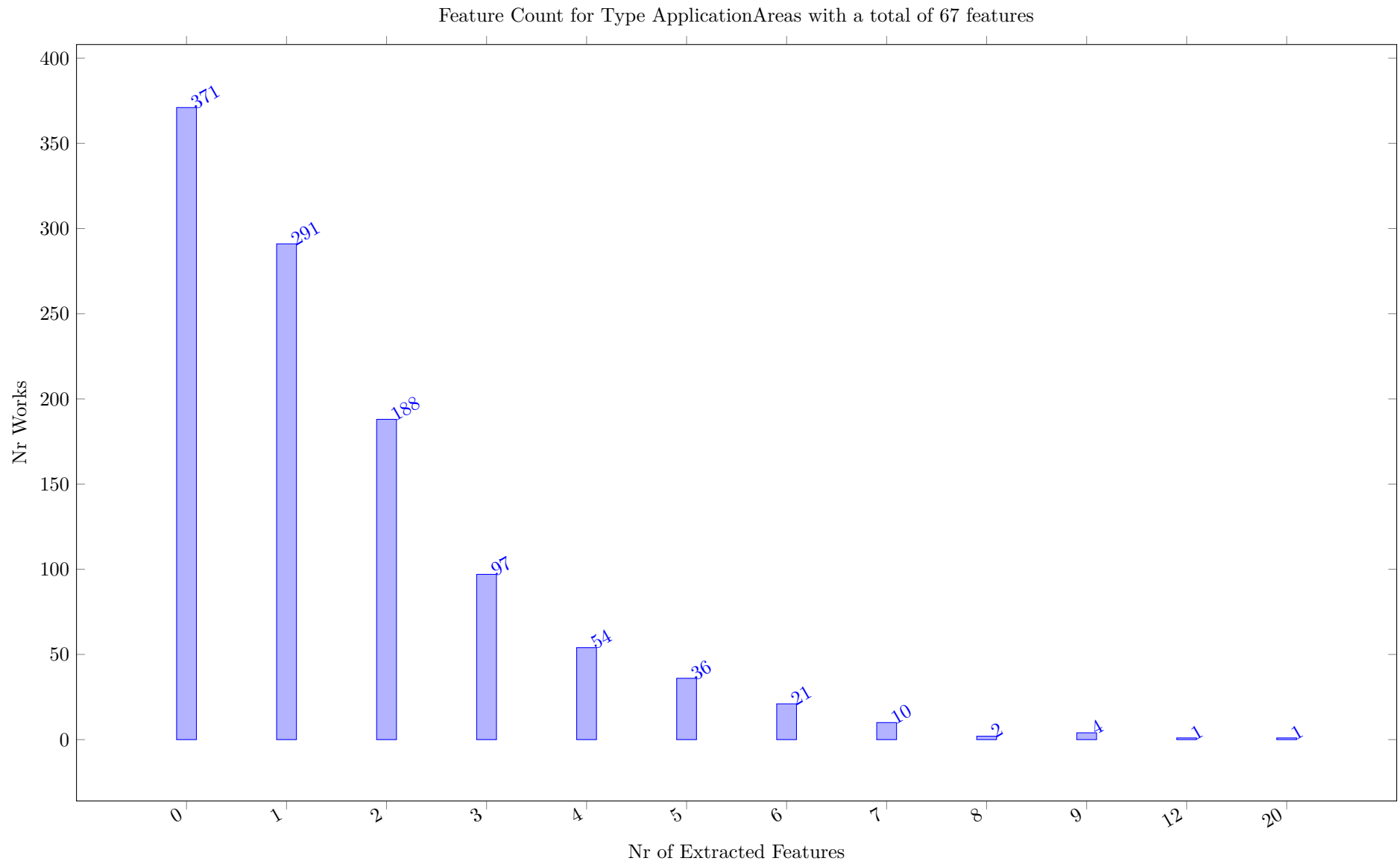


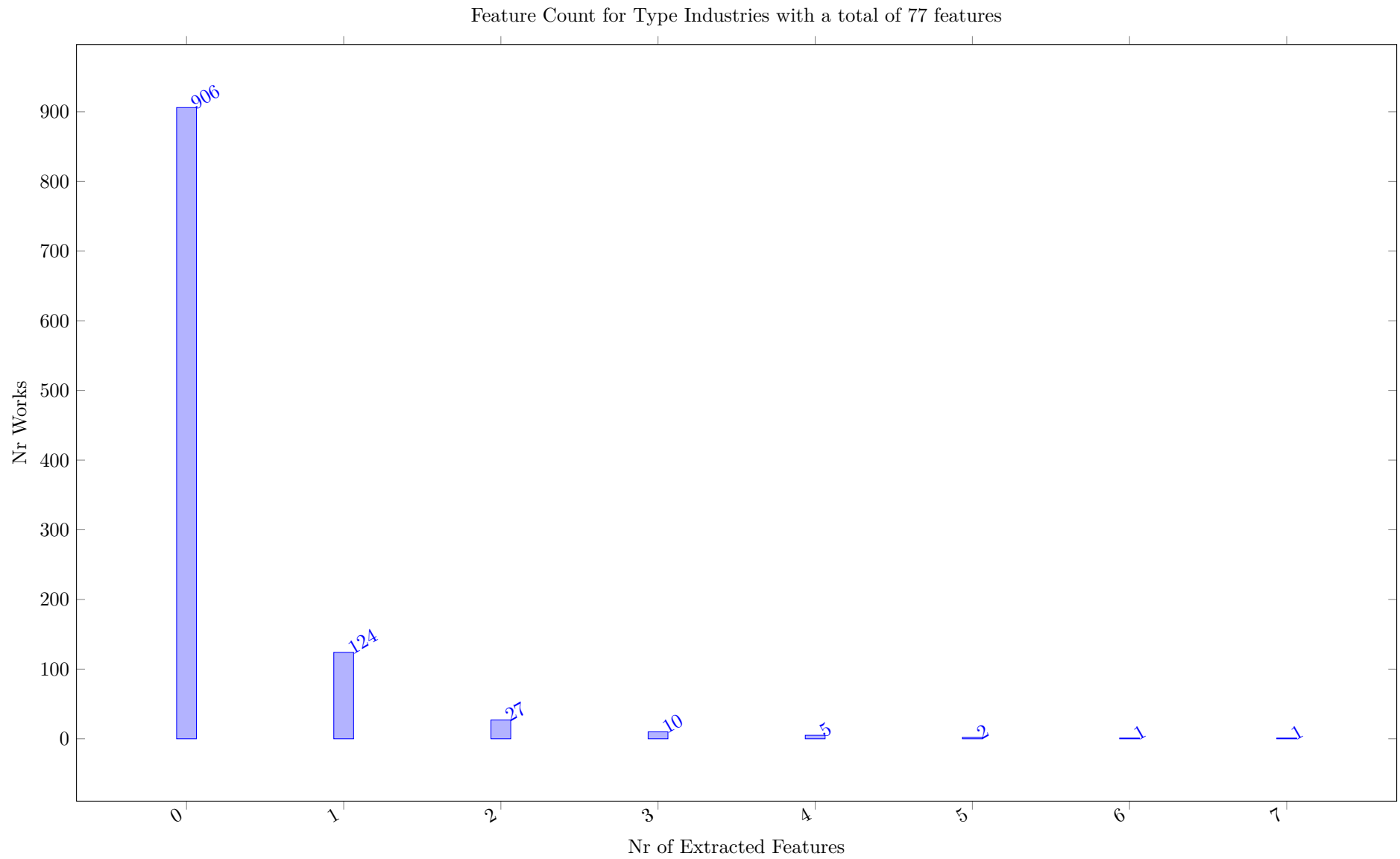


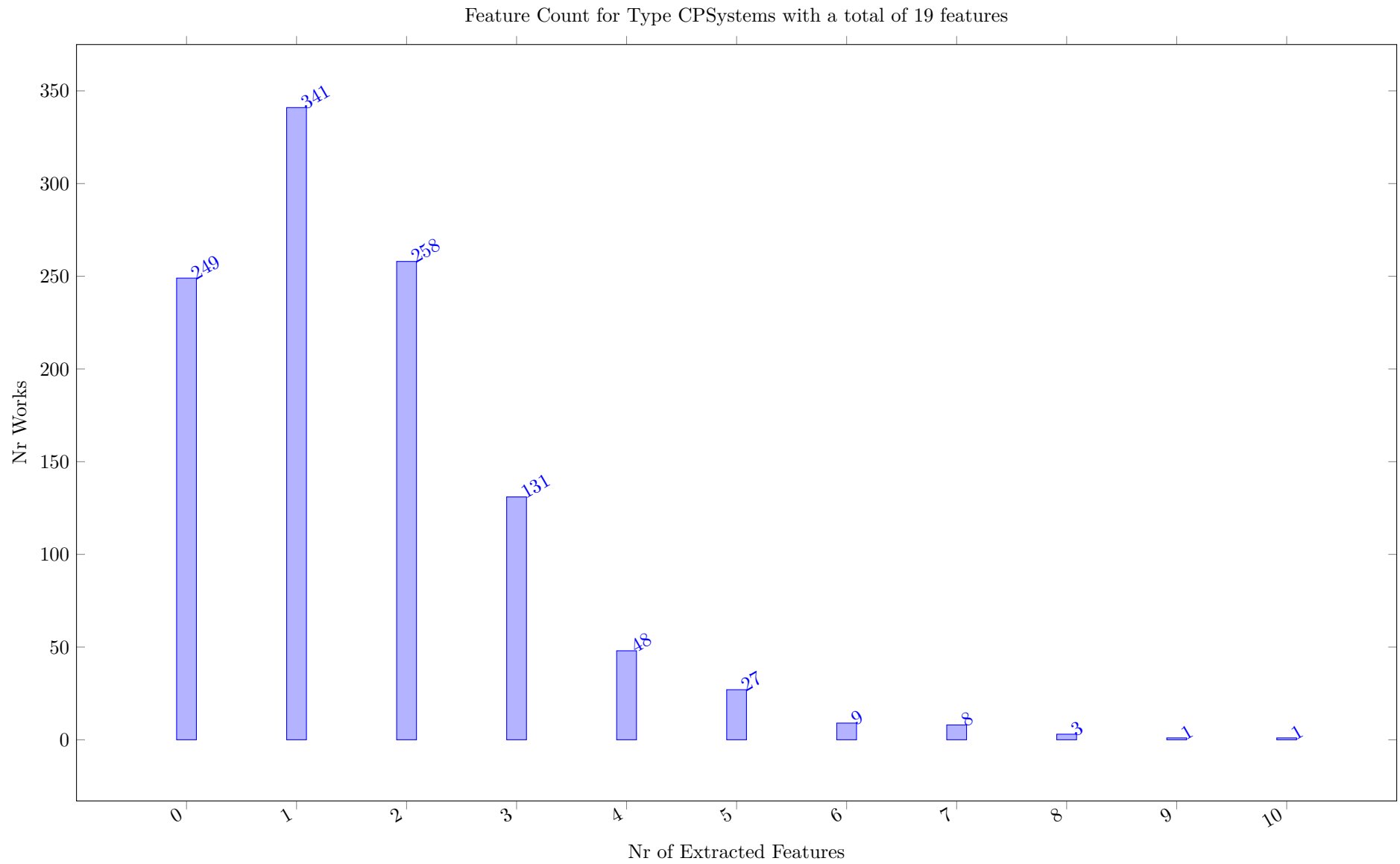


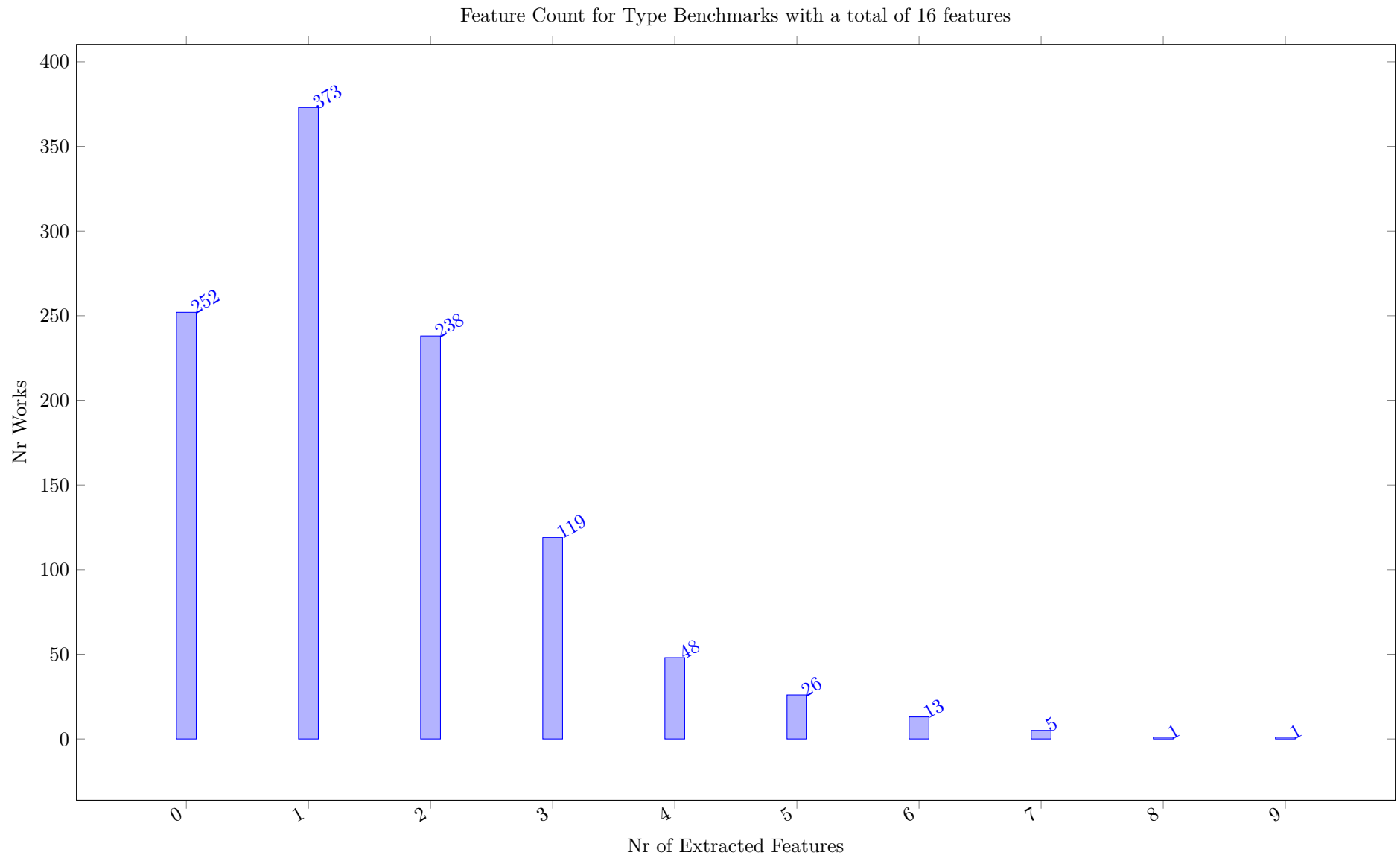


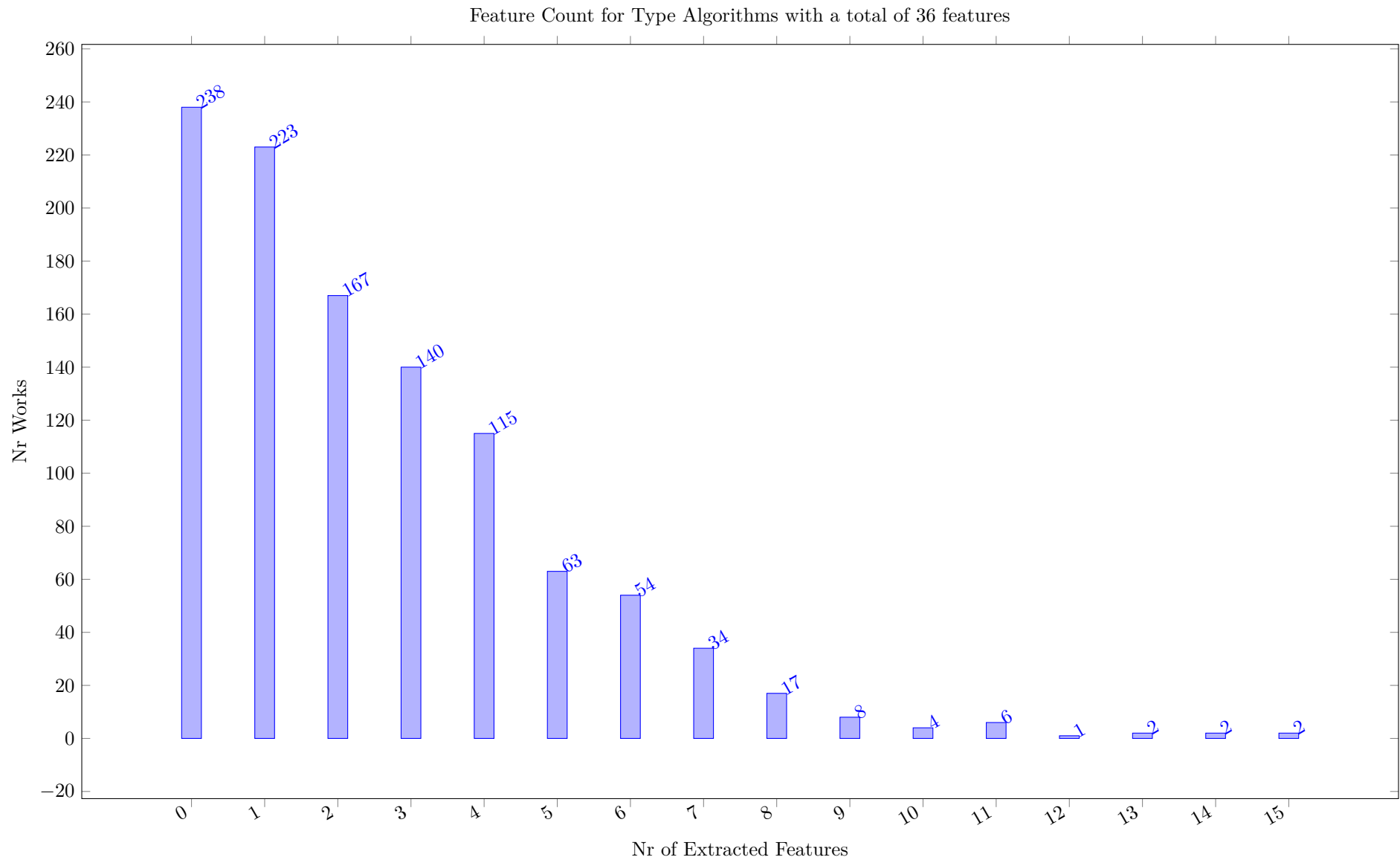










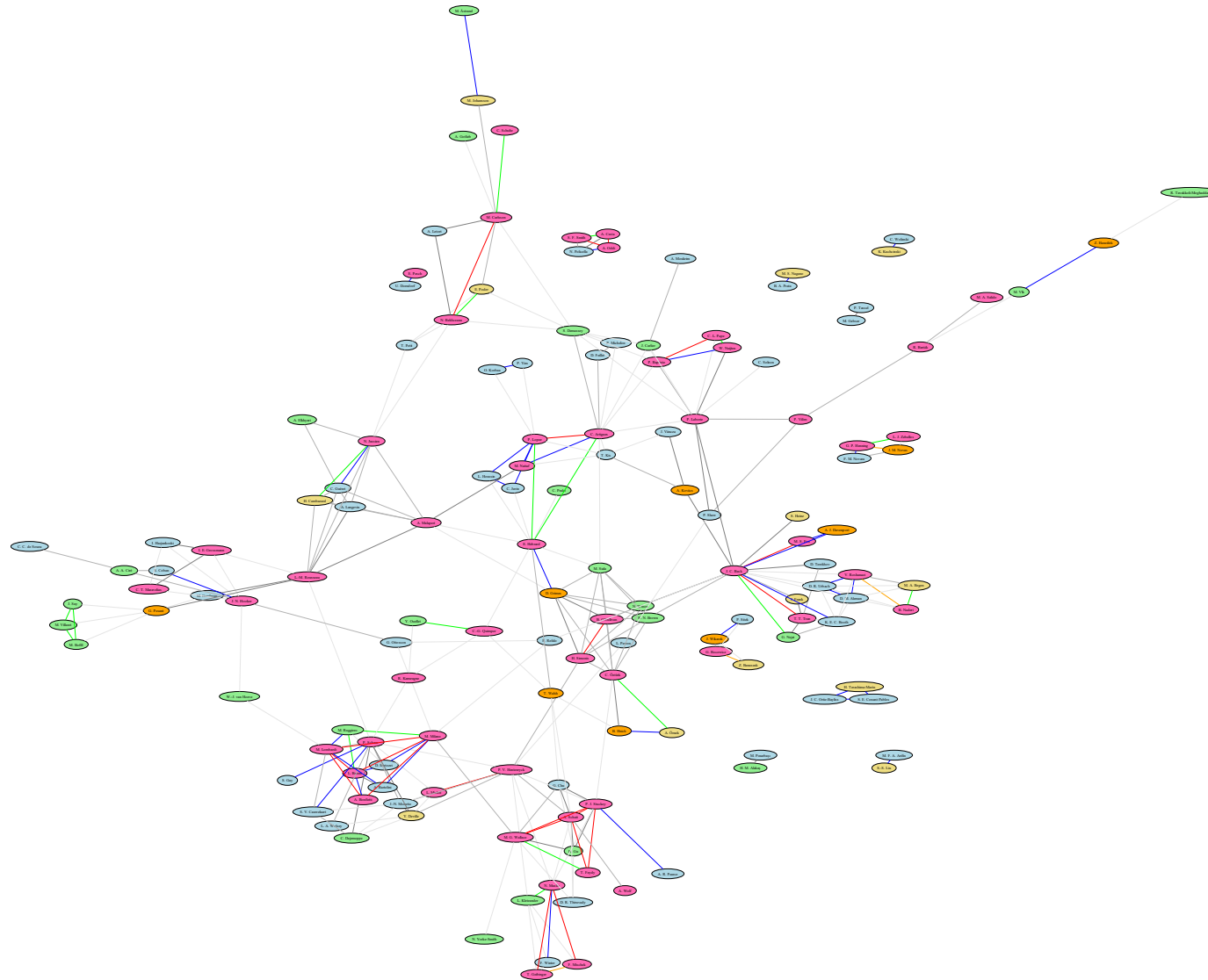


## 13 Coauthor graph

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

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

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

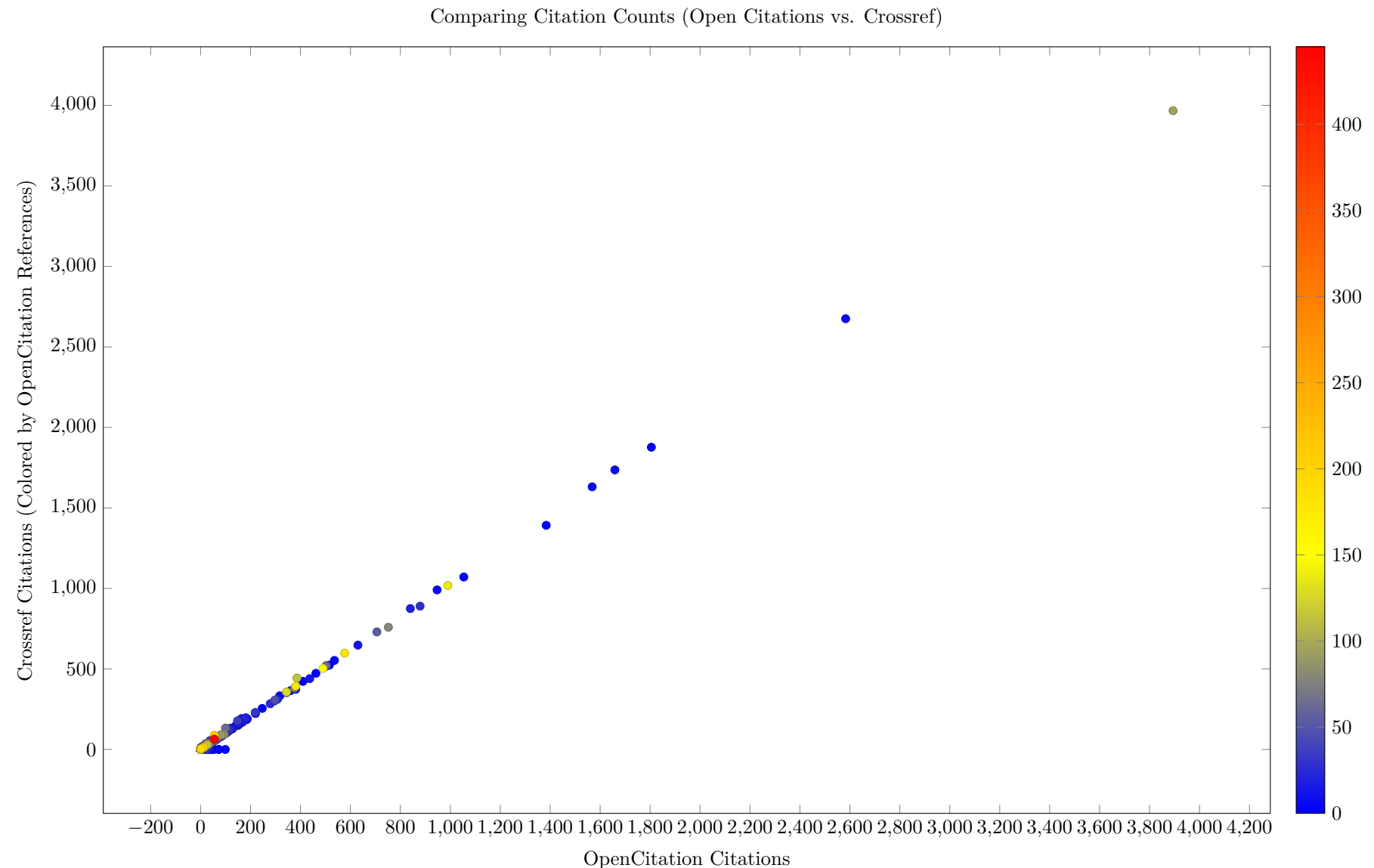


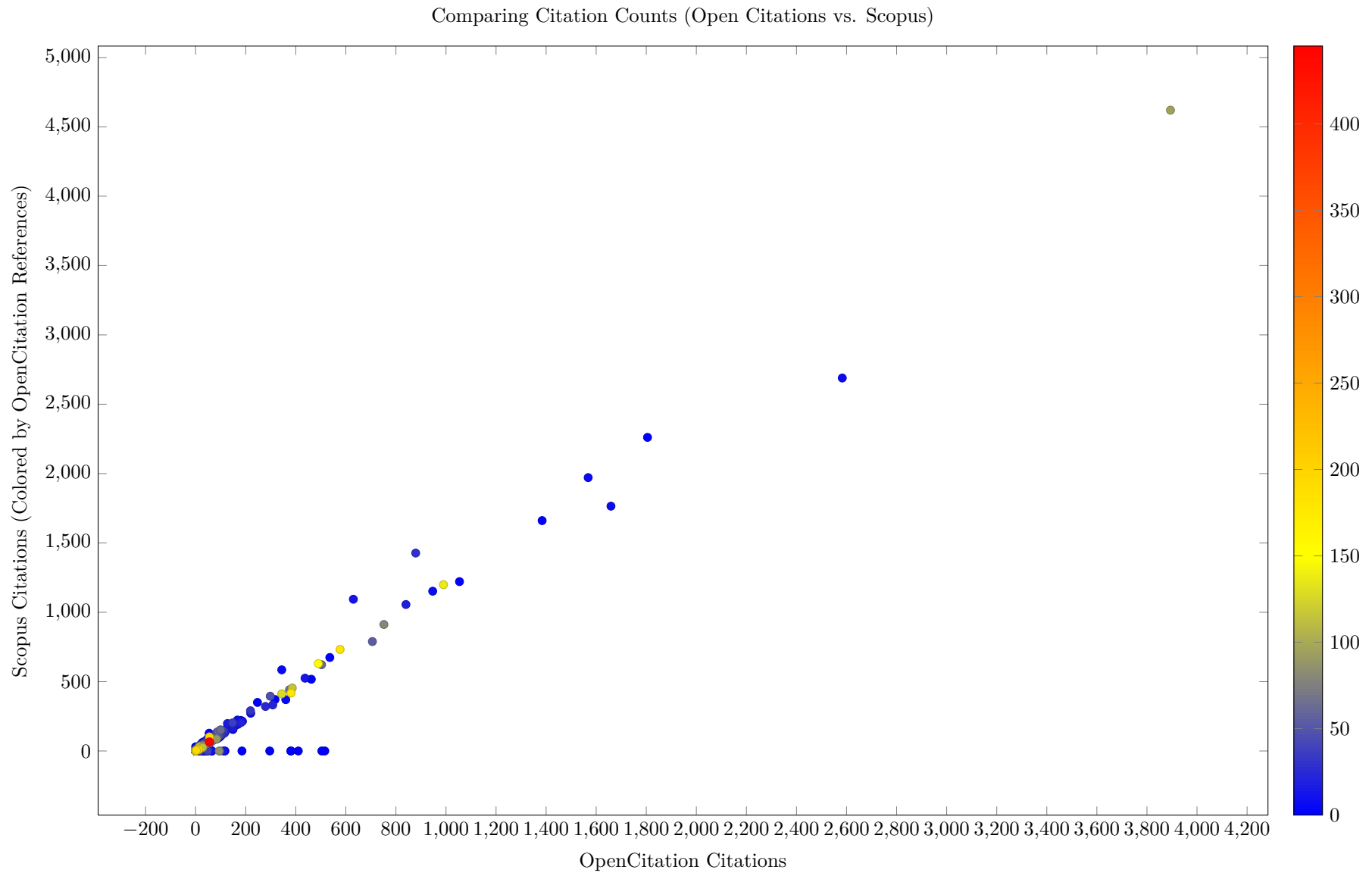


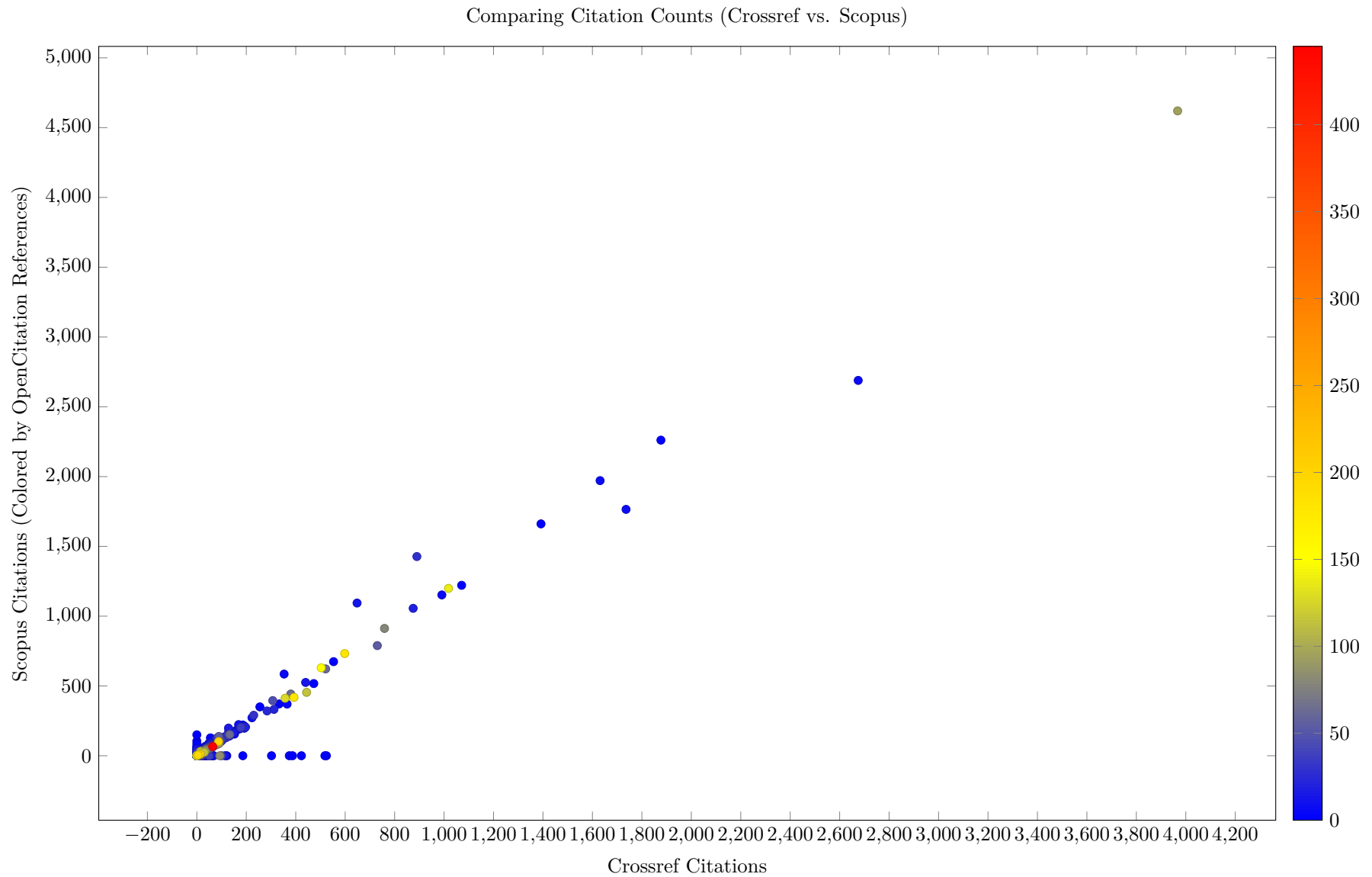


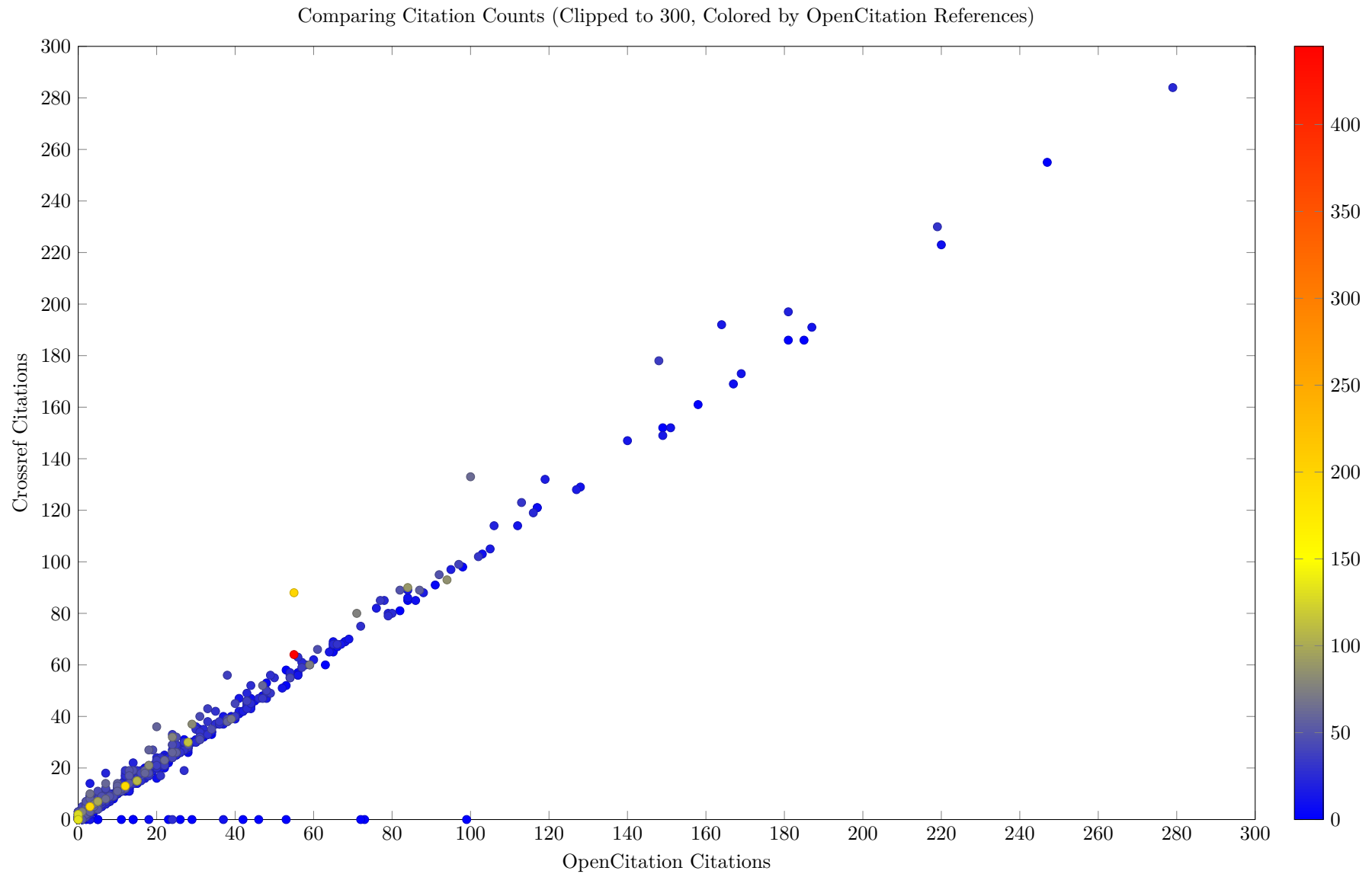
## 14 OpenCitations vs. Crossref Data vs. Scopus Data

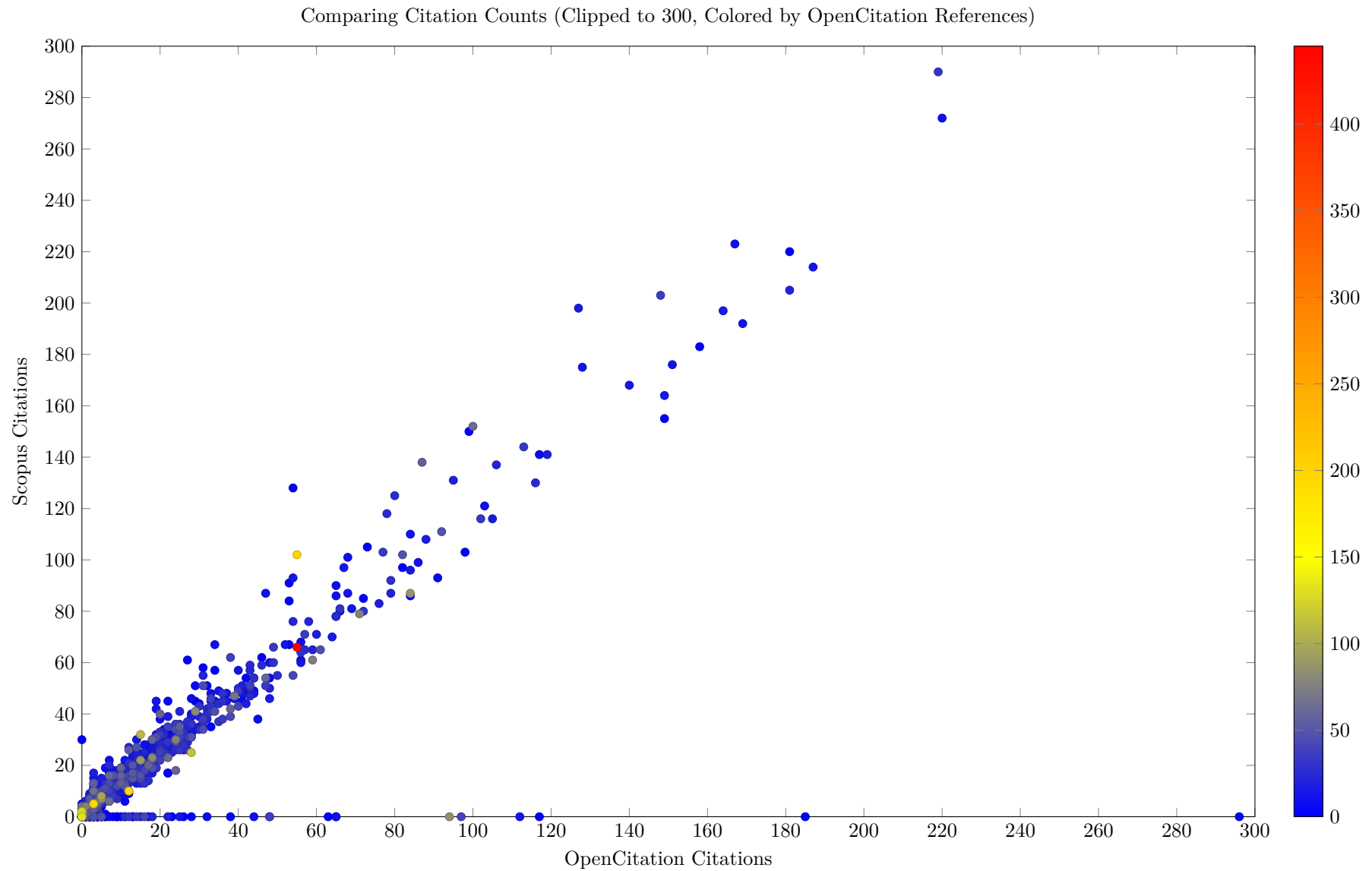
### 14.1 Citation Comparison

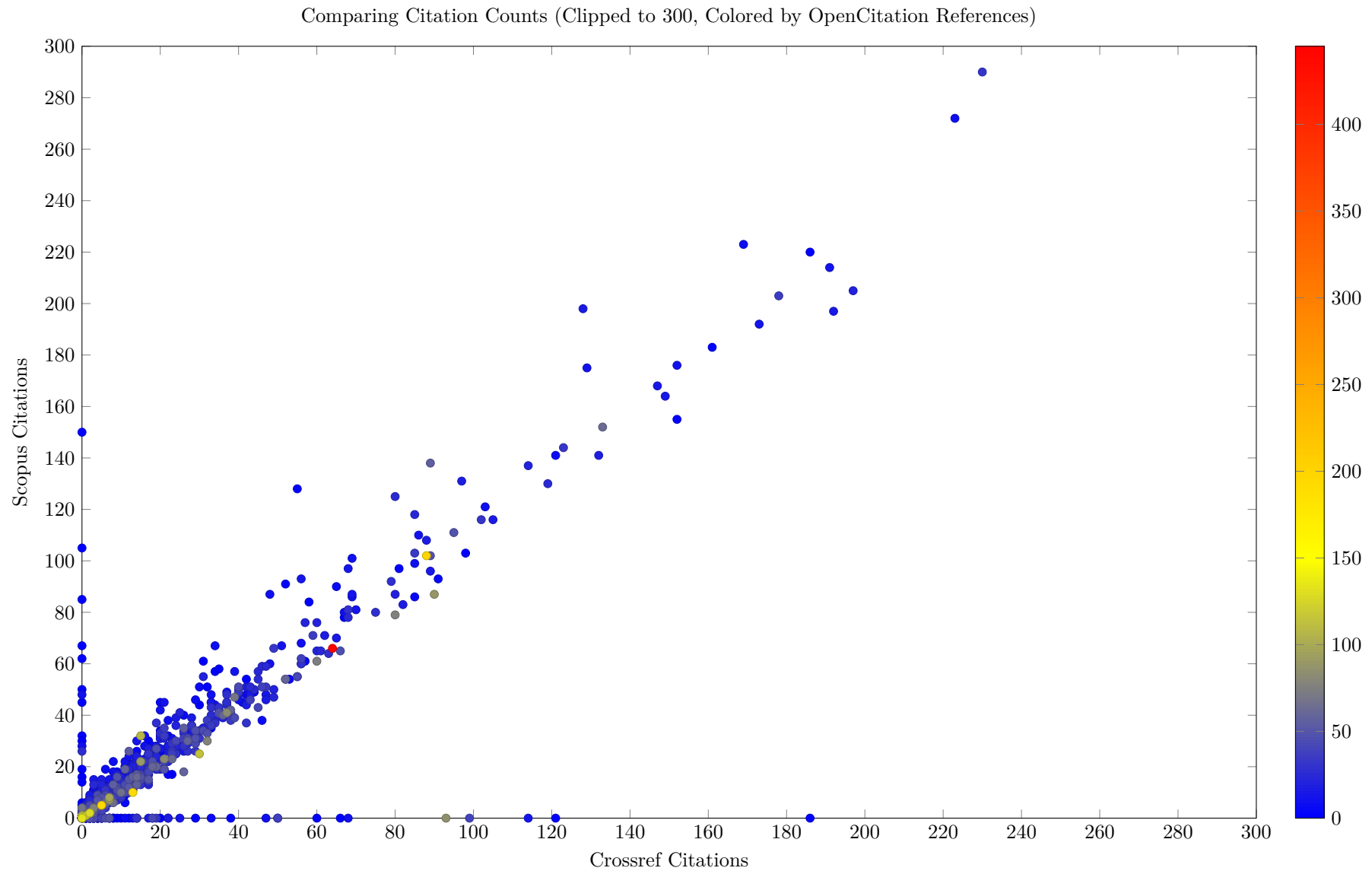






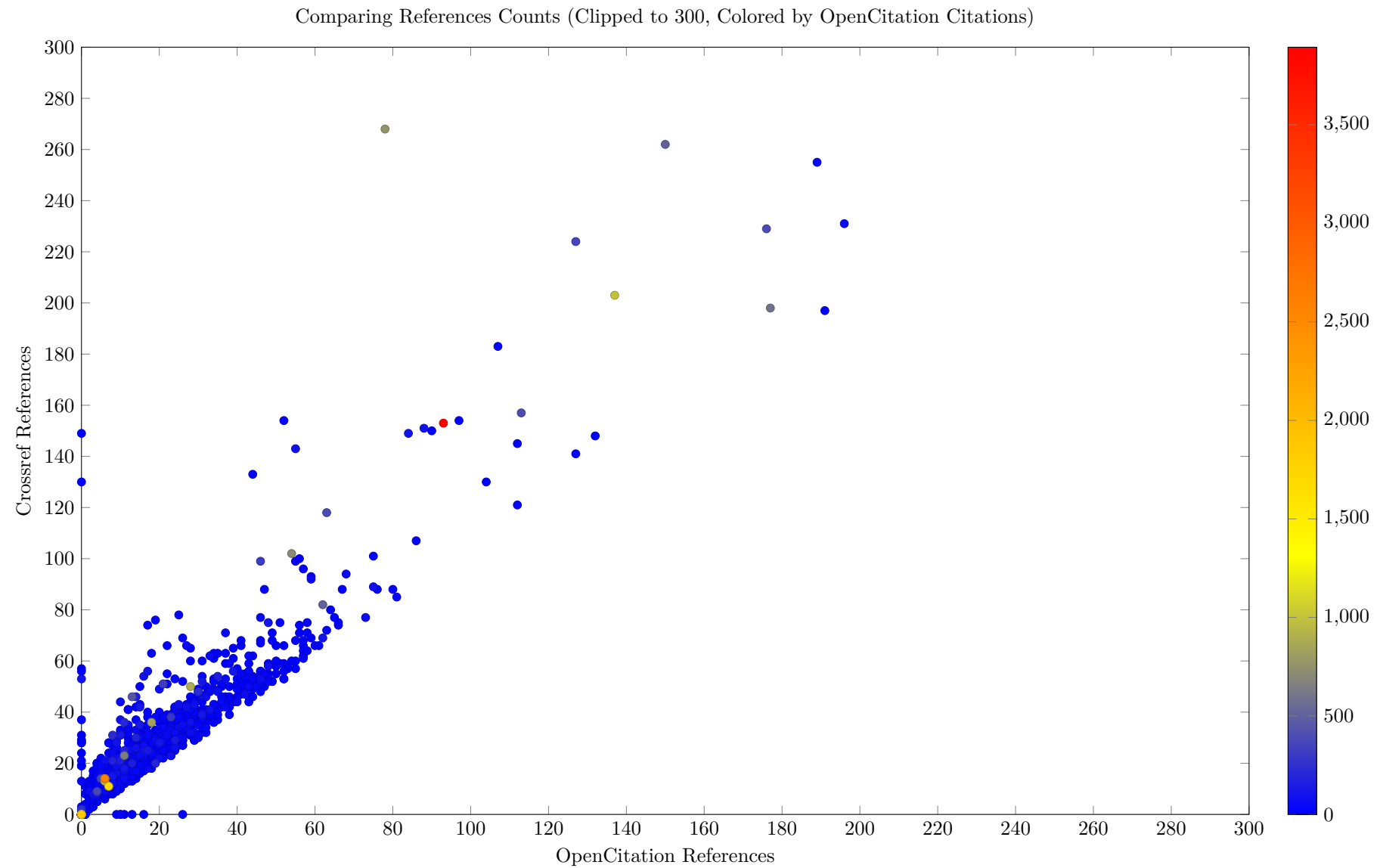








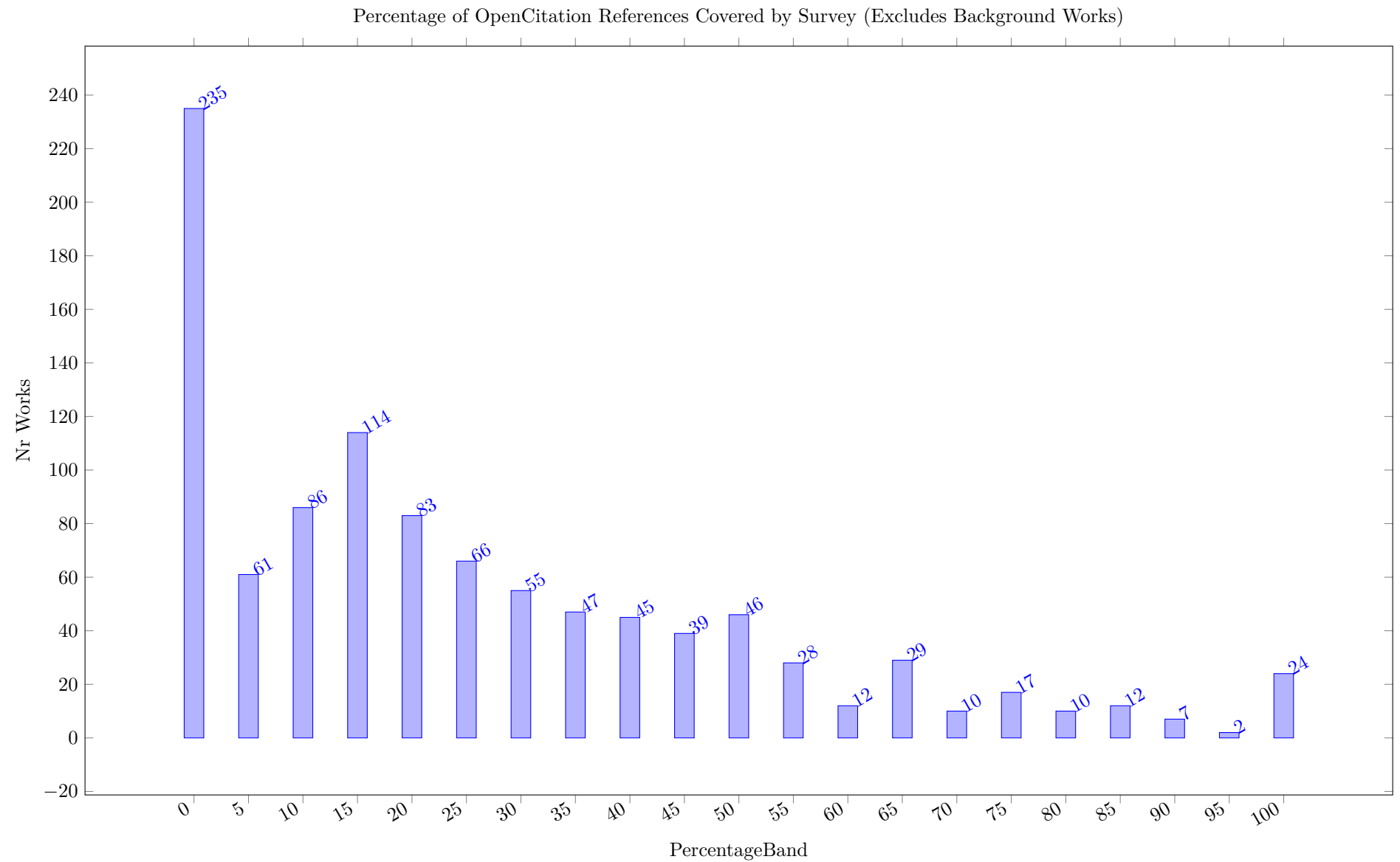
## 14.2 References Comparison

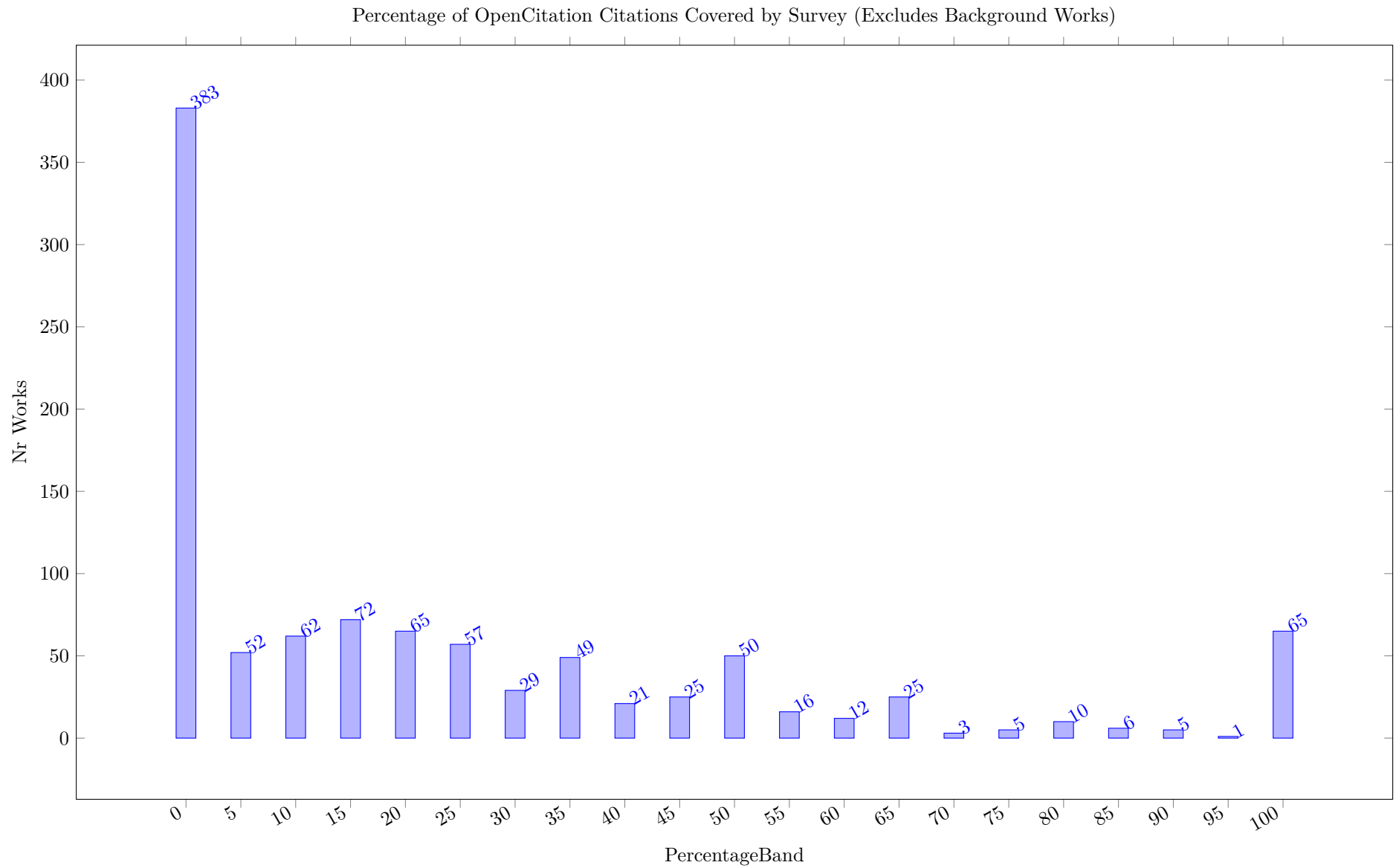


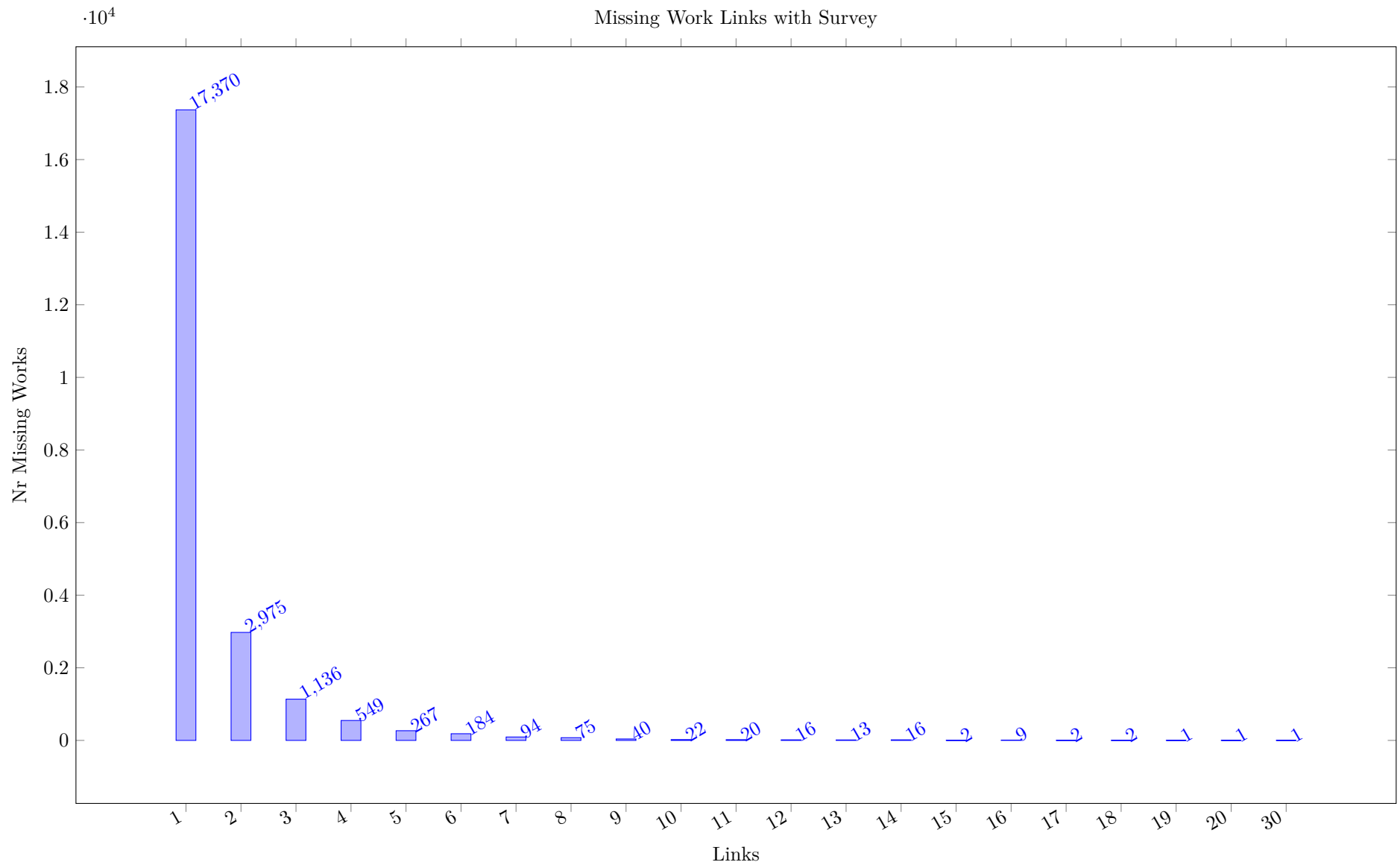




### 14.3 Percentage Cover







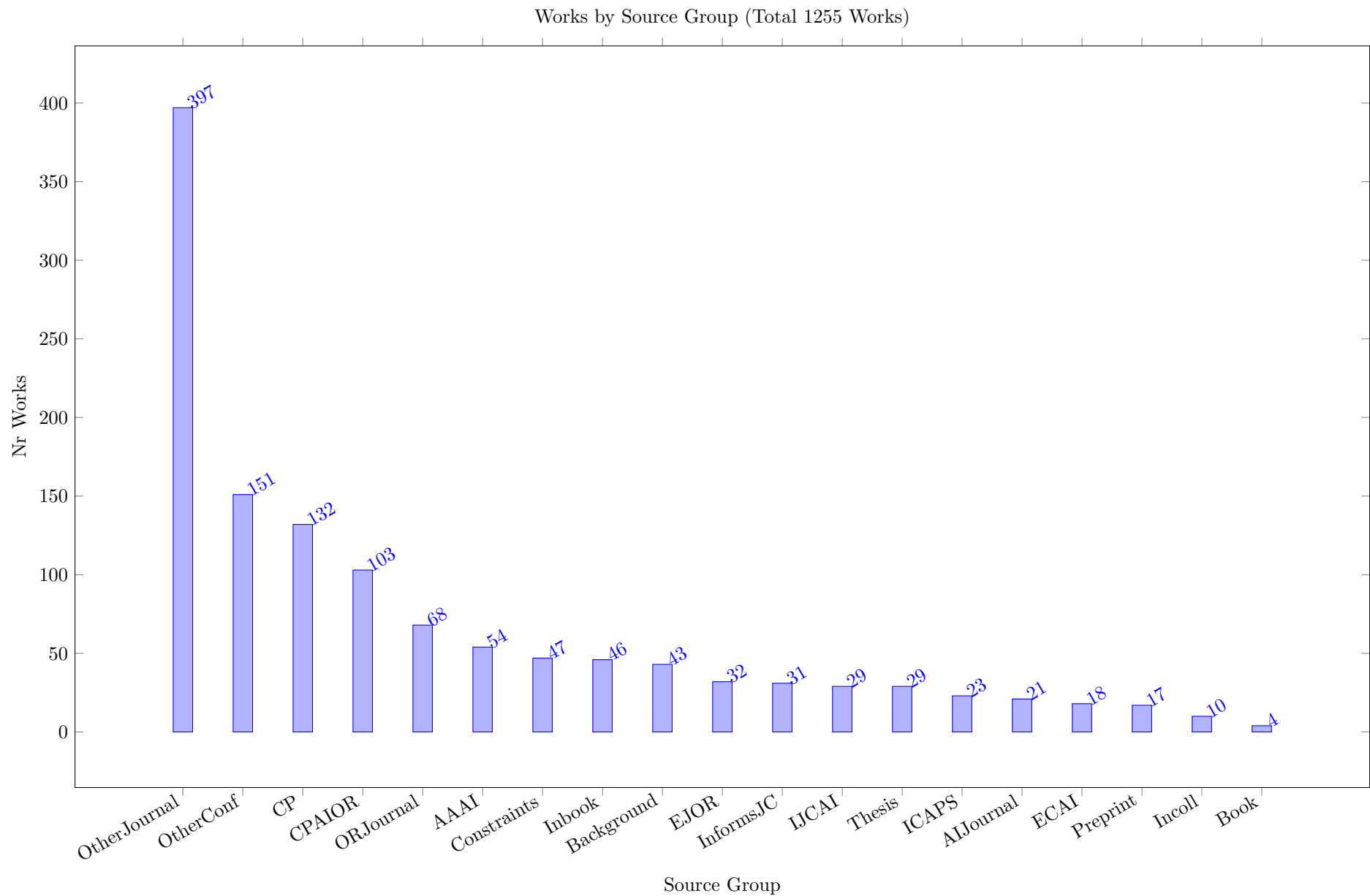
## 15 Citations by Year and Source Group

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

Table 13: Source Groups

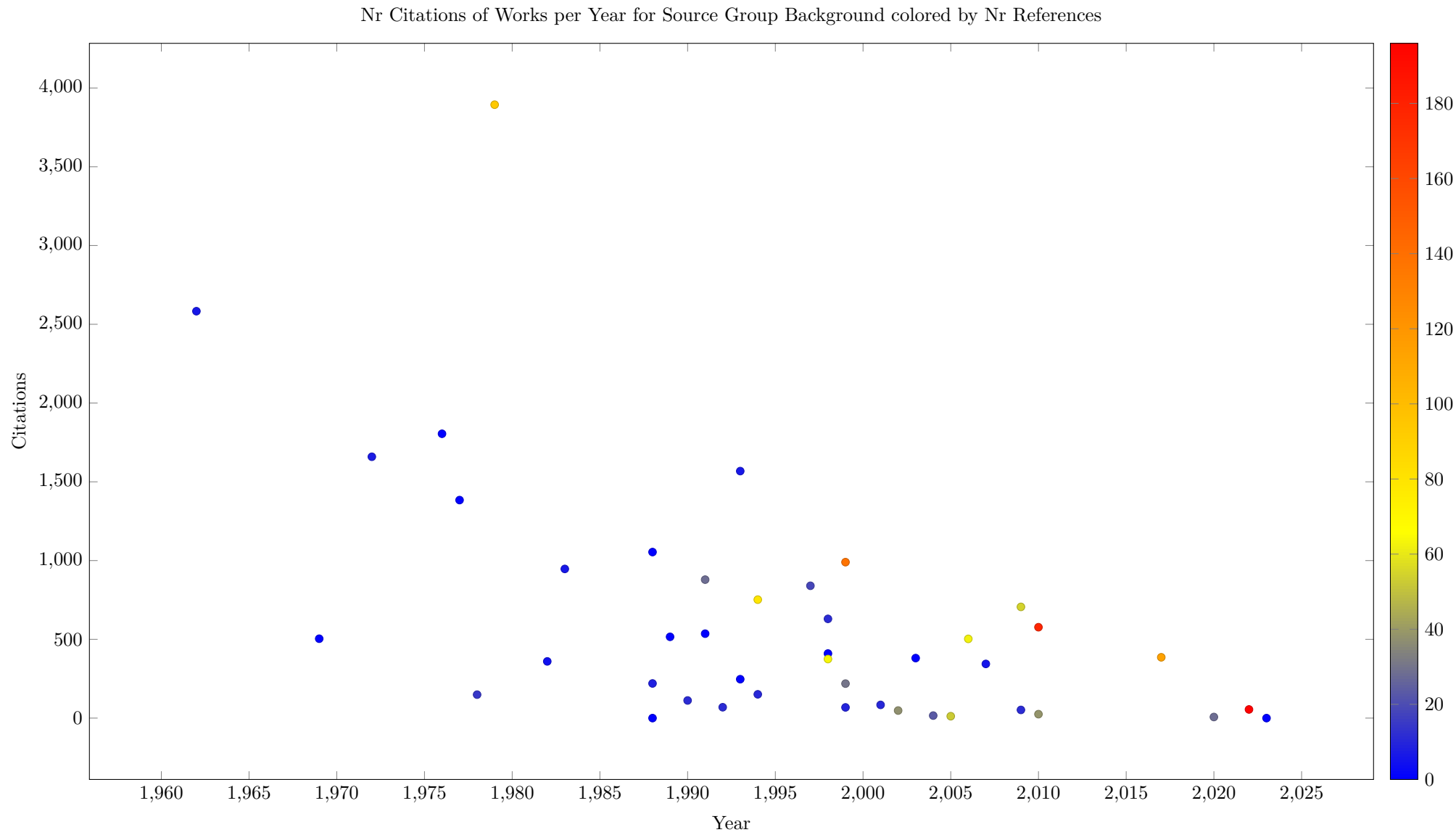
Name	Description
Background	Background material
CP	The CP conference (from 1995)
CPAIOR	The CPAIOR conference (starting 2004)
ICAPS	The ICAPS conference
AAAI	AAAI conference
IJCAI	IJCAI Conference
ECAI	ECAI Conference
OtherConf	Any other conference
Constraints	The Constraint Journal
EJOR	The European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

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

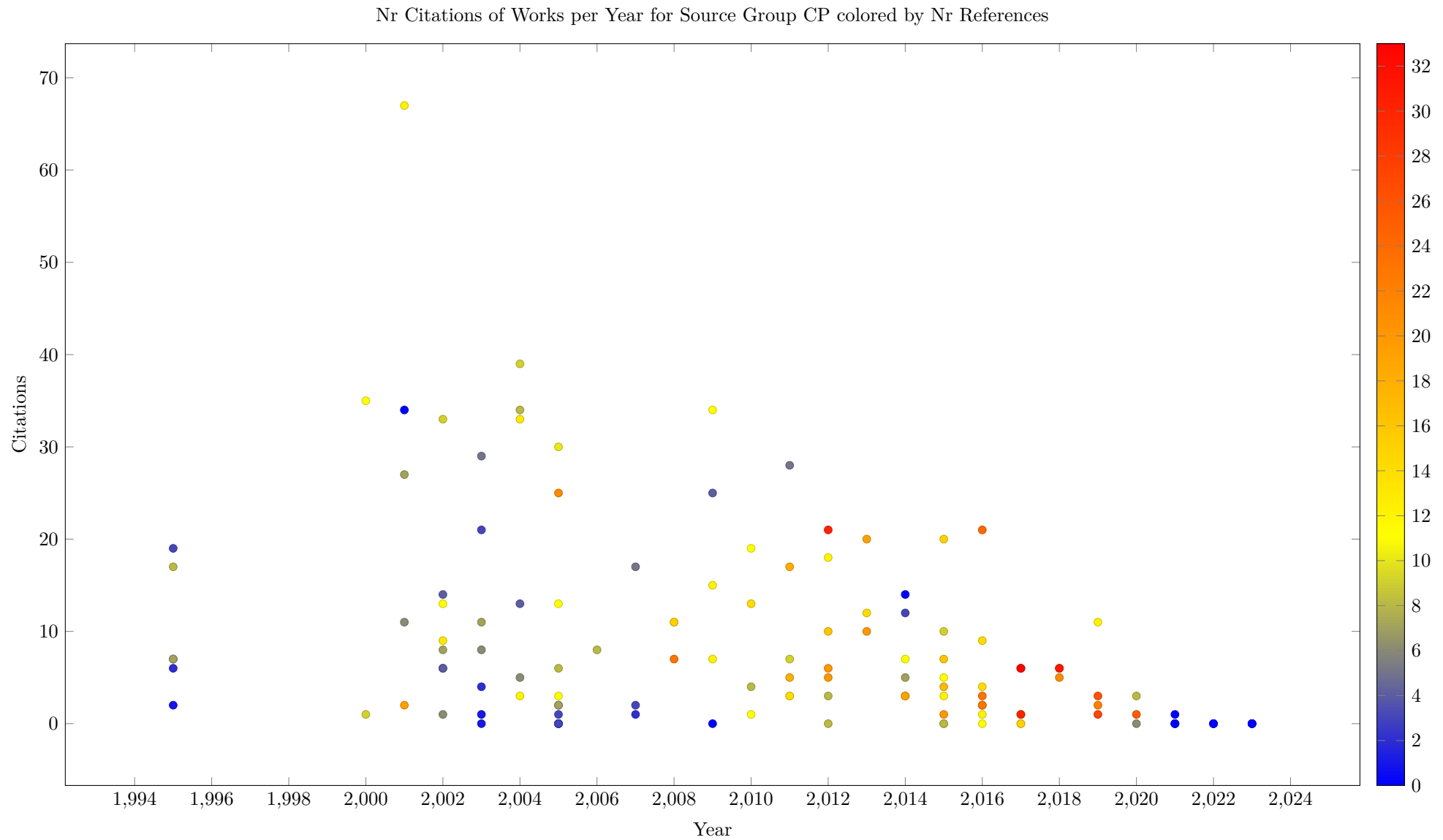


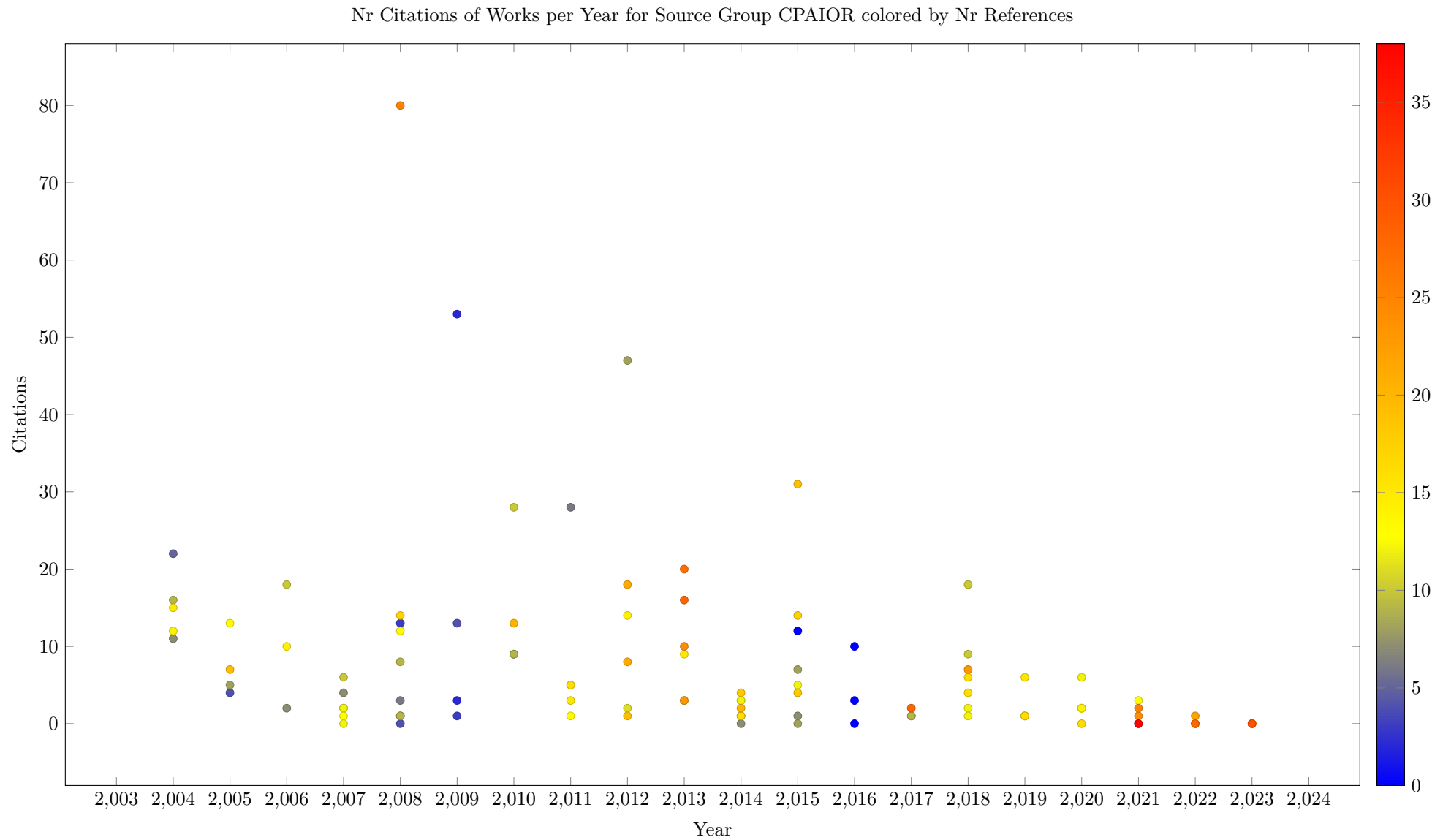
## 15.1 Source Group Citations by Year

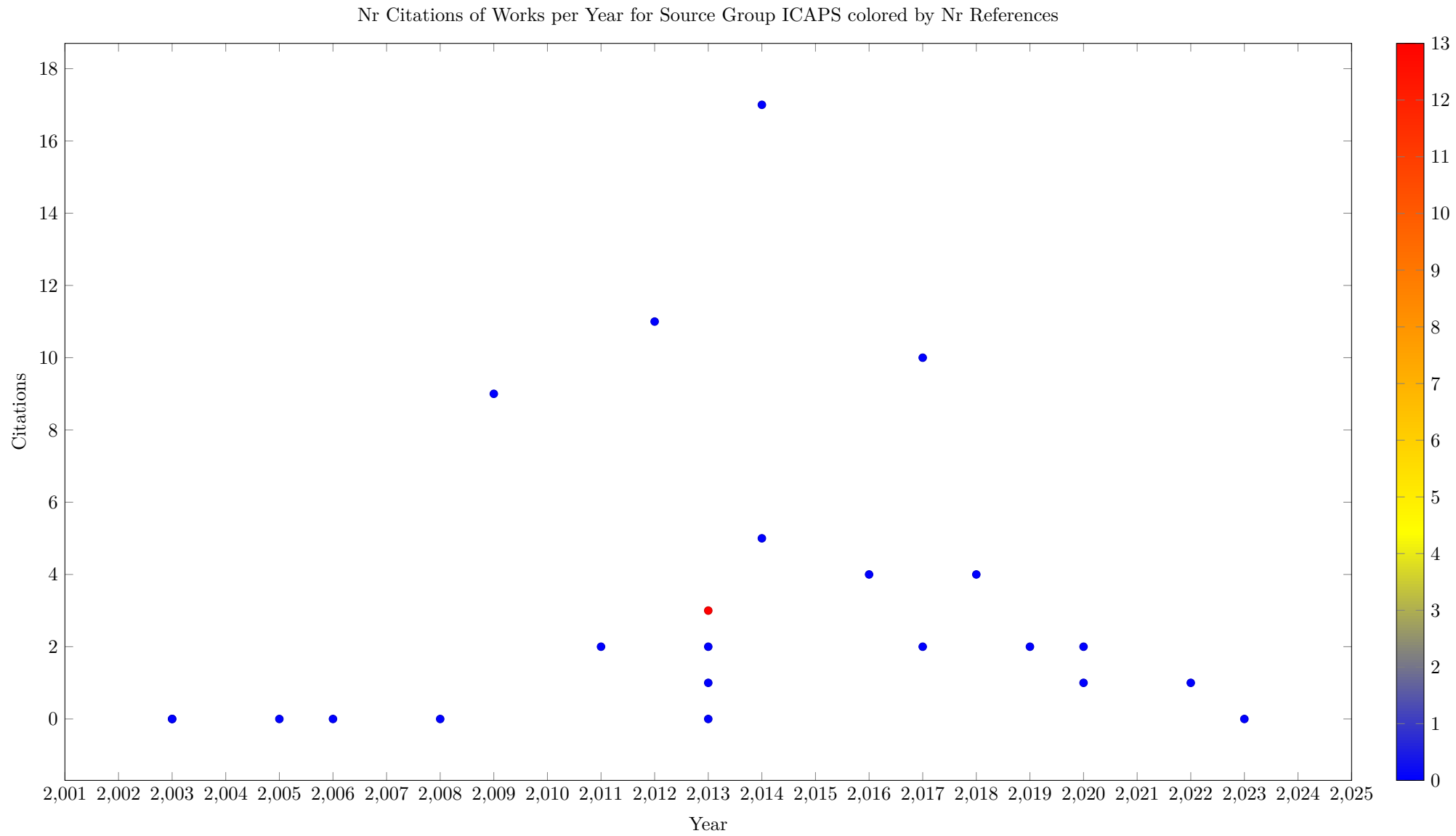
We plot for each source group the number of citations obtained by papers published in a given year. This plot gives both an indication in which period the source group was active, and how significant the works in the source are. It is of course natural that more recent papers have fewer citations than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

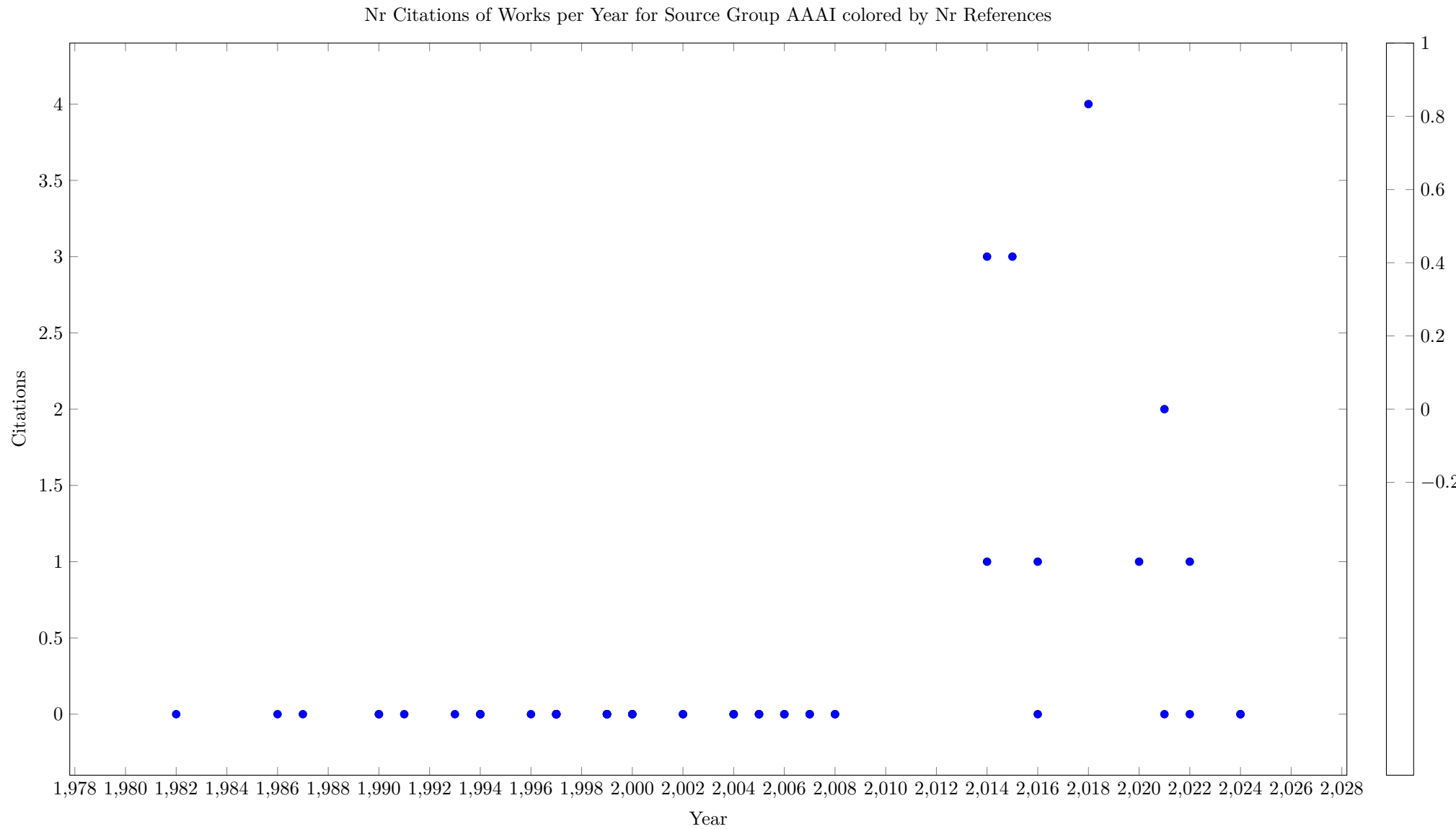


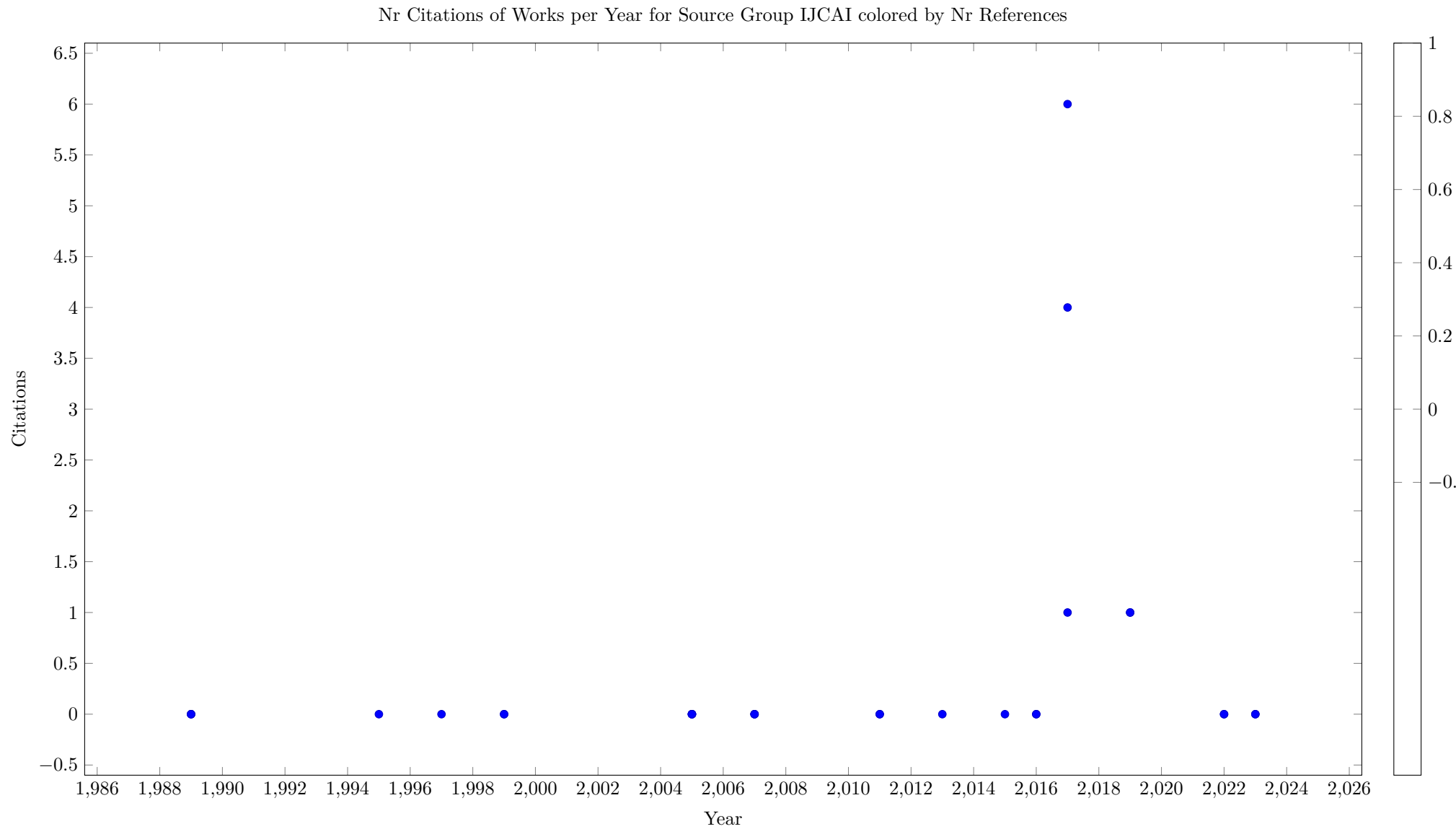


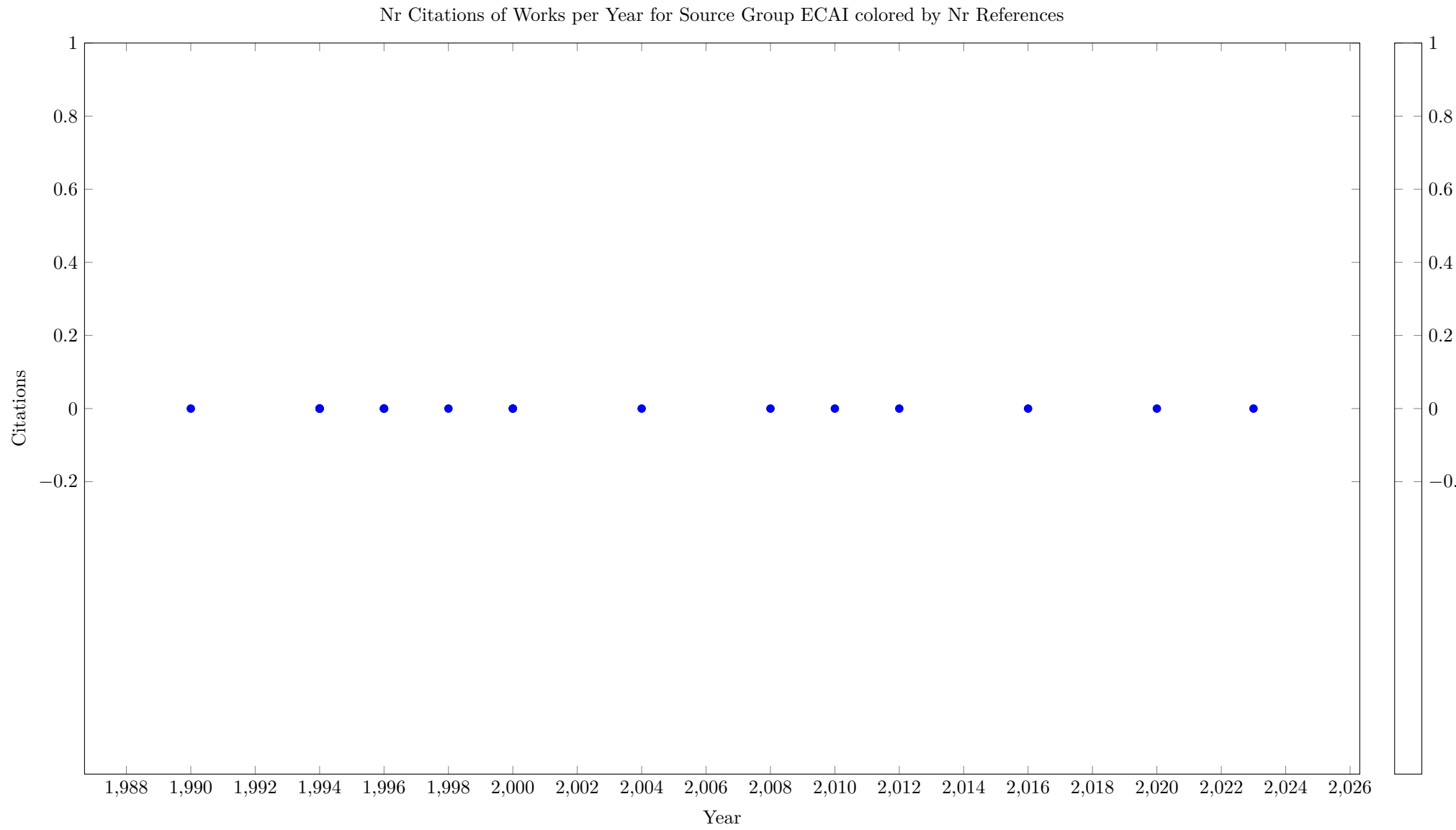


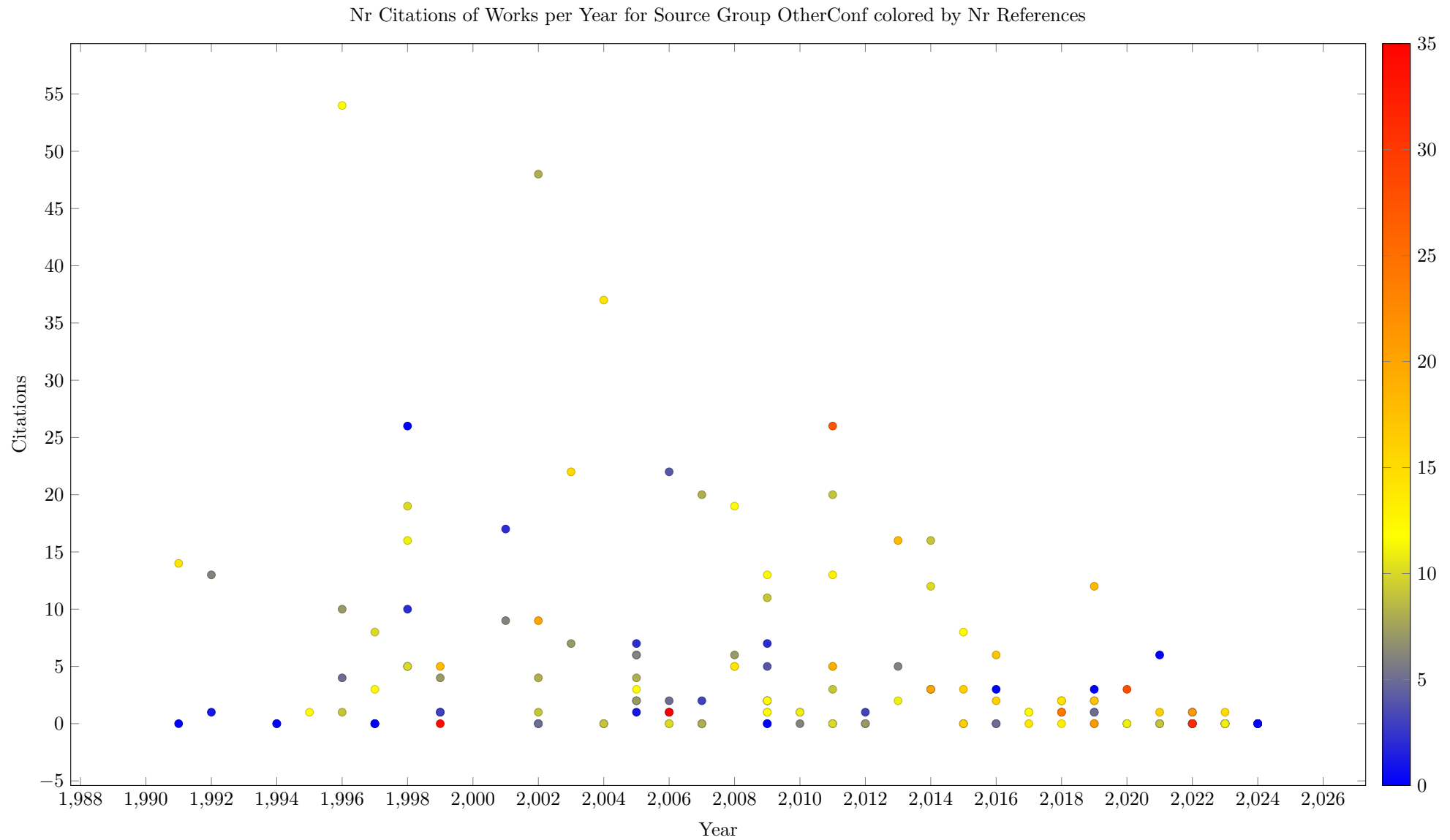


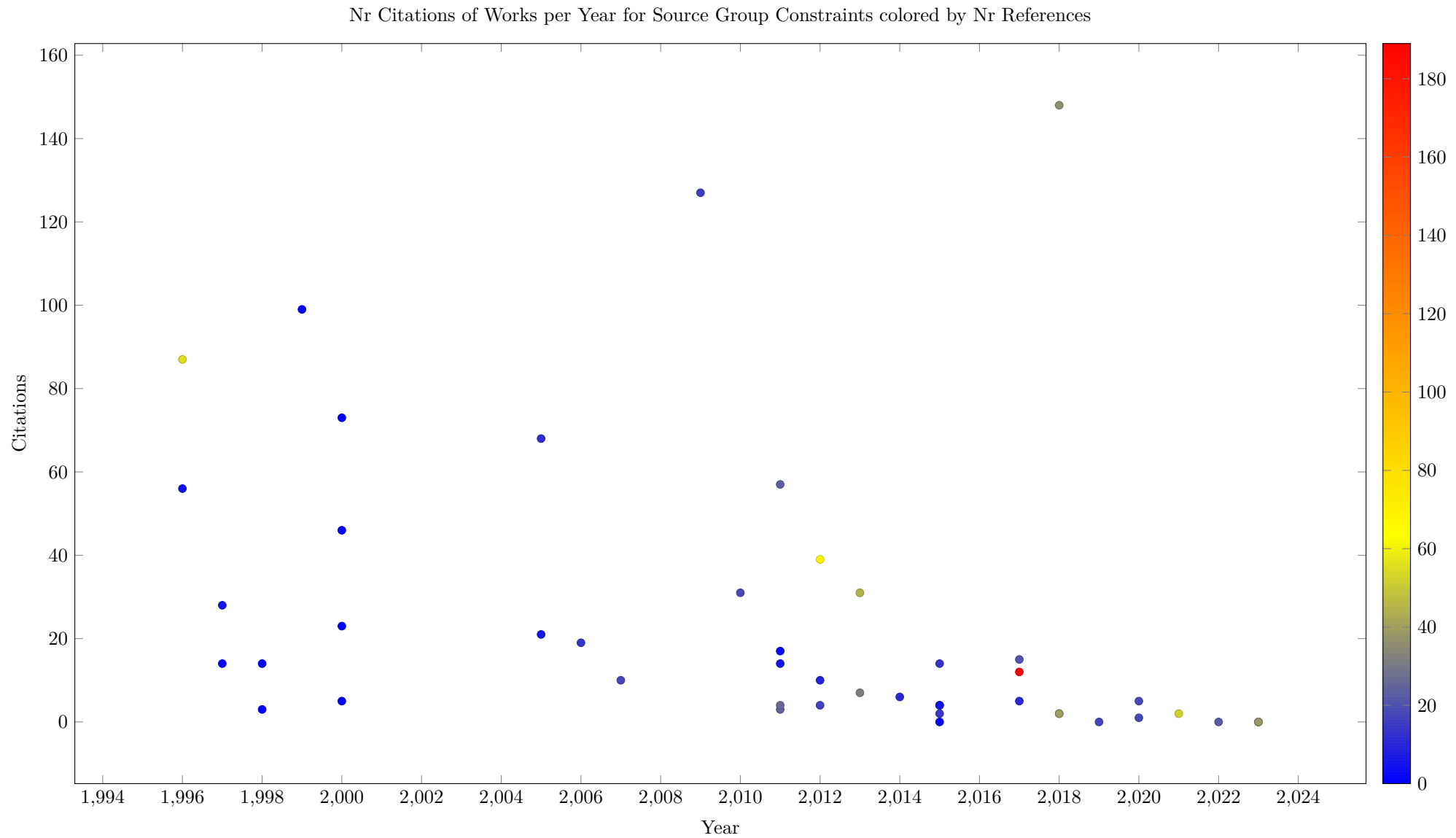




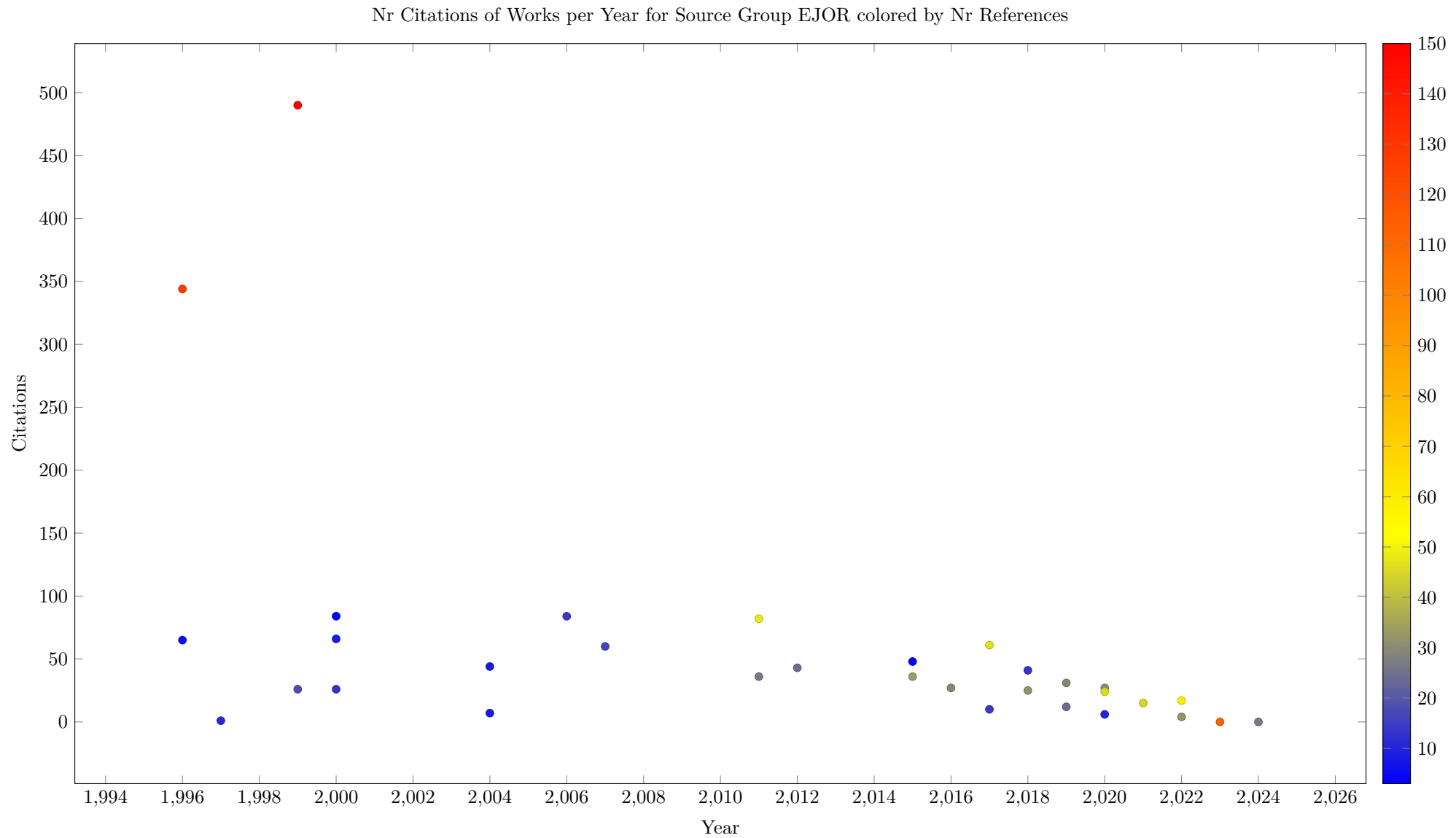


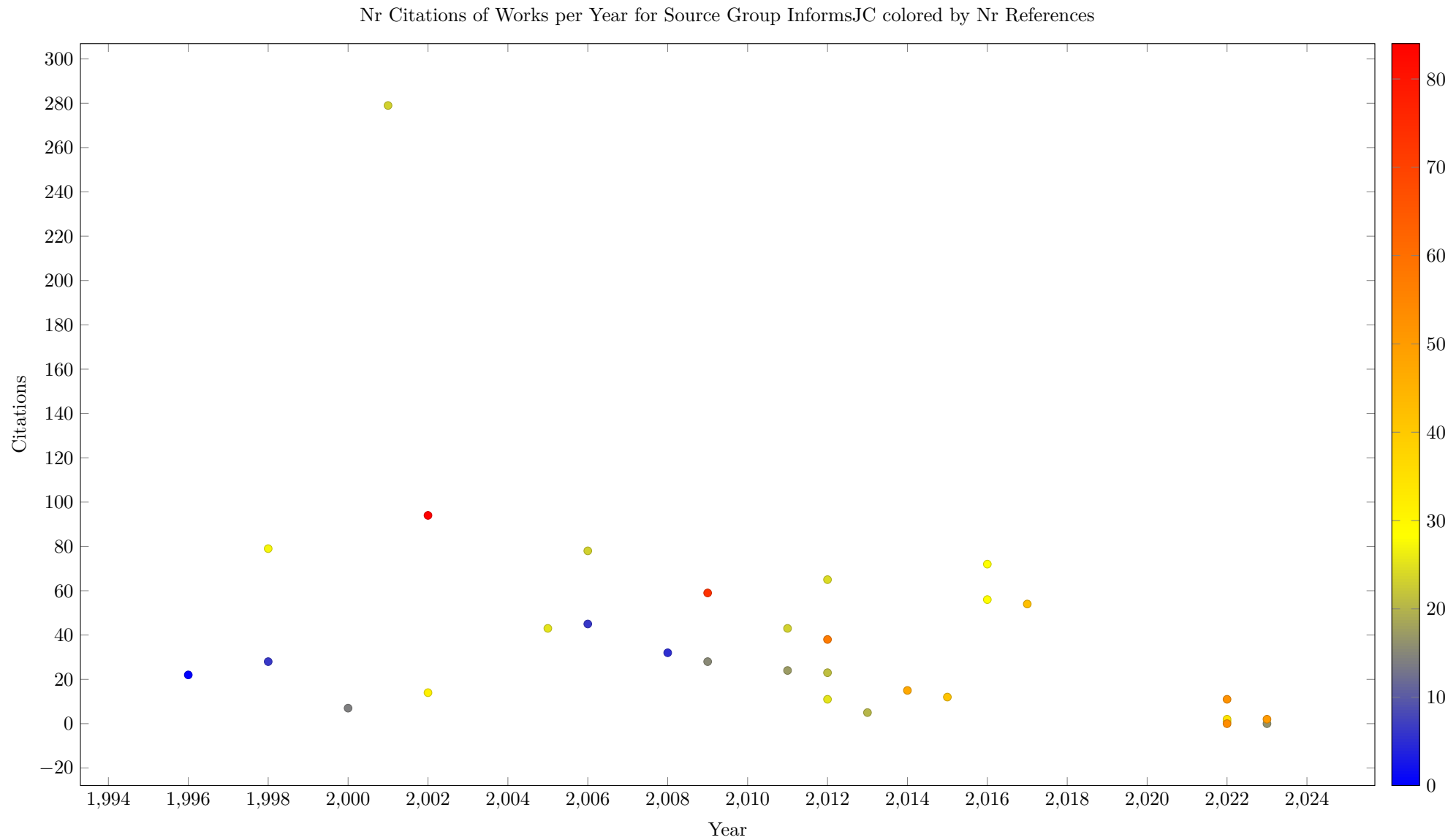


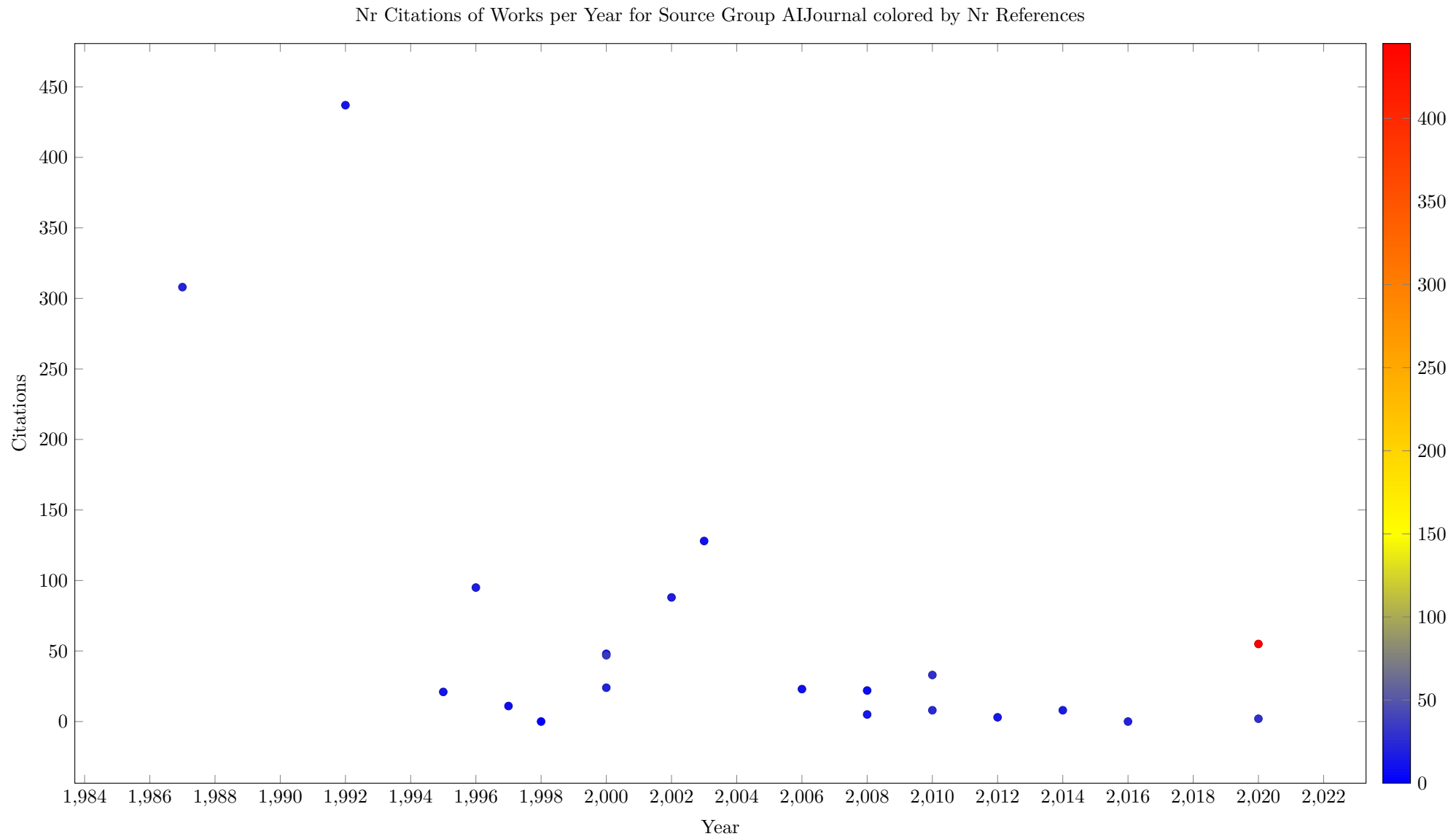


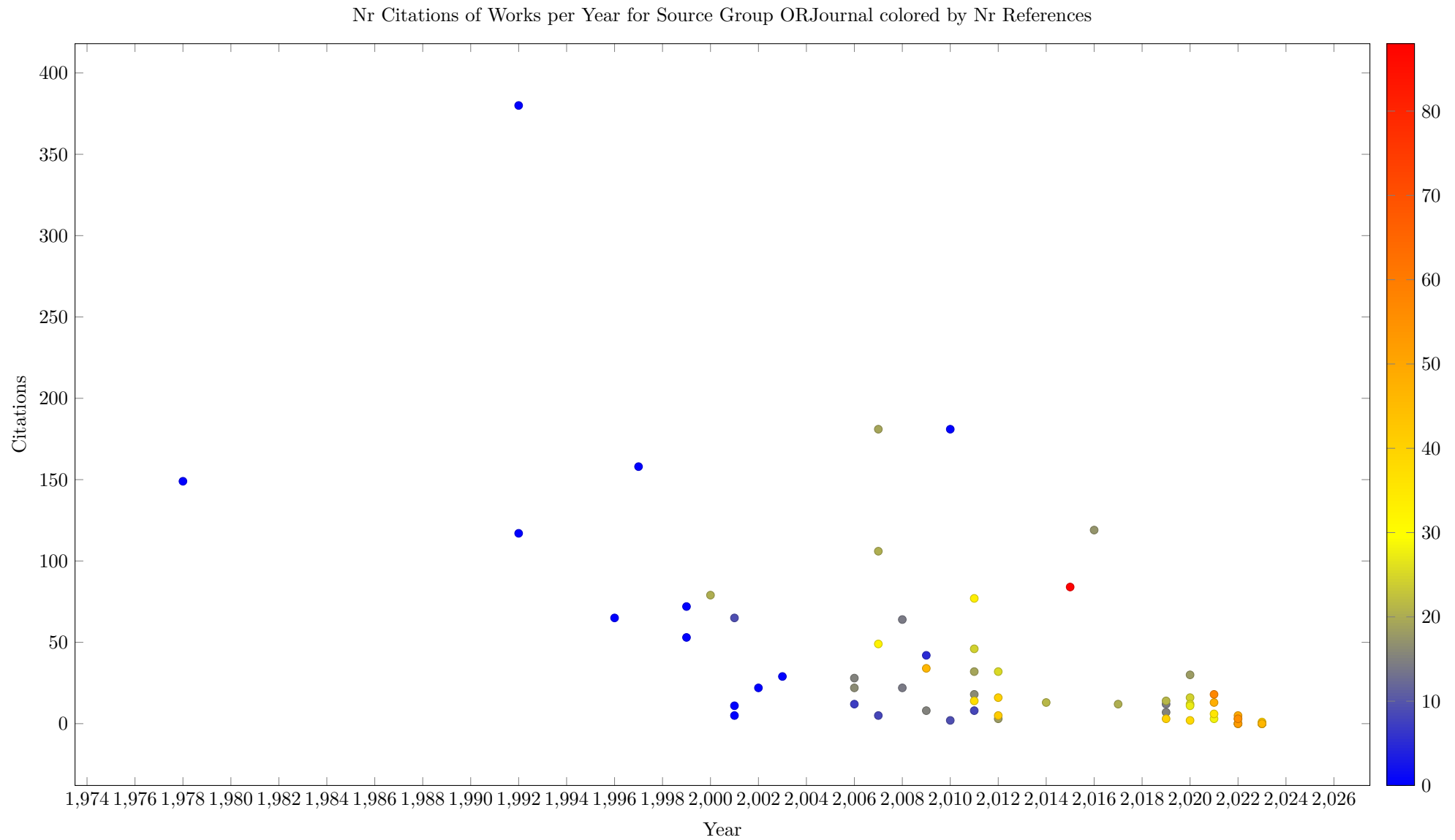


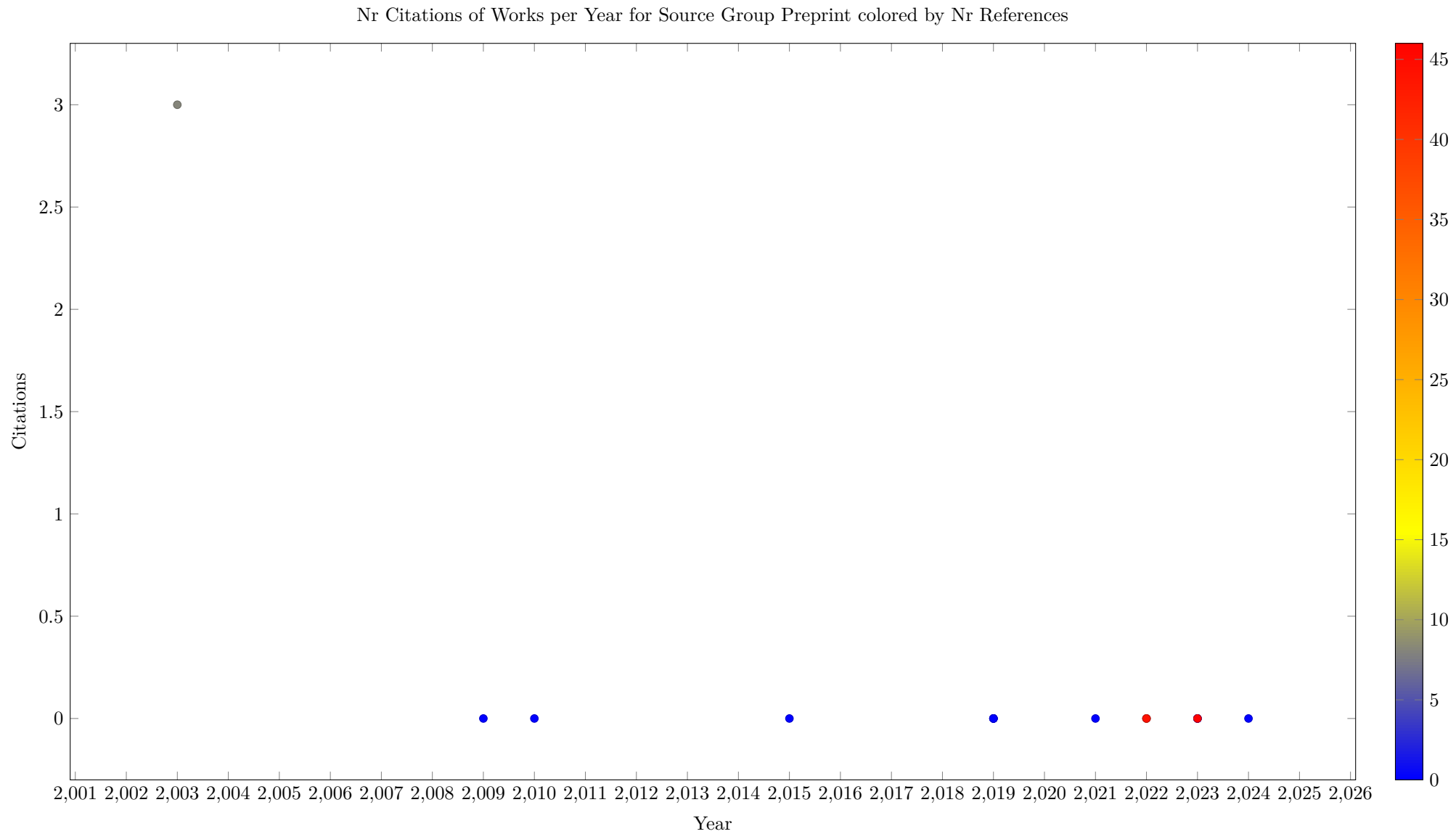


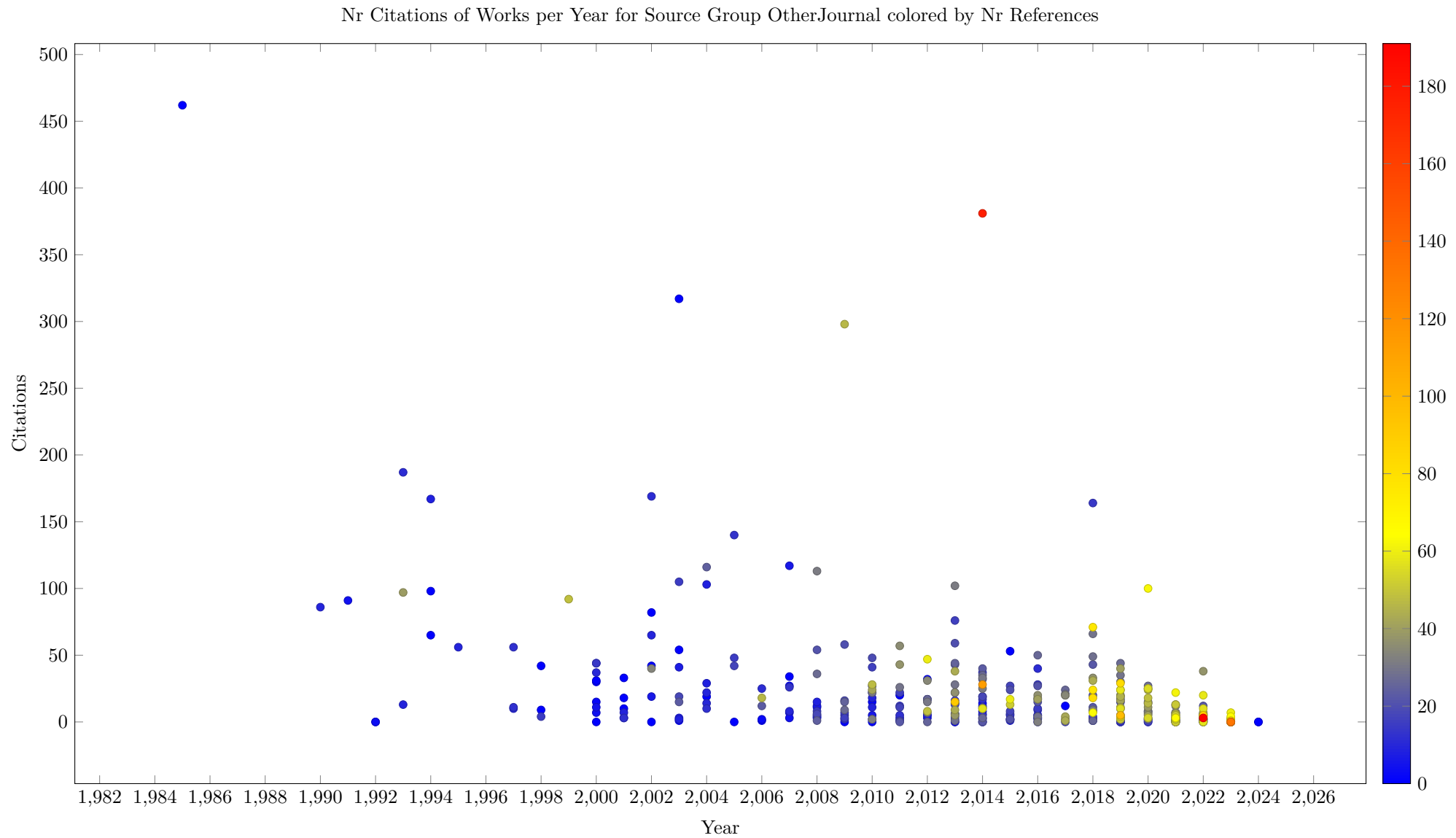


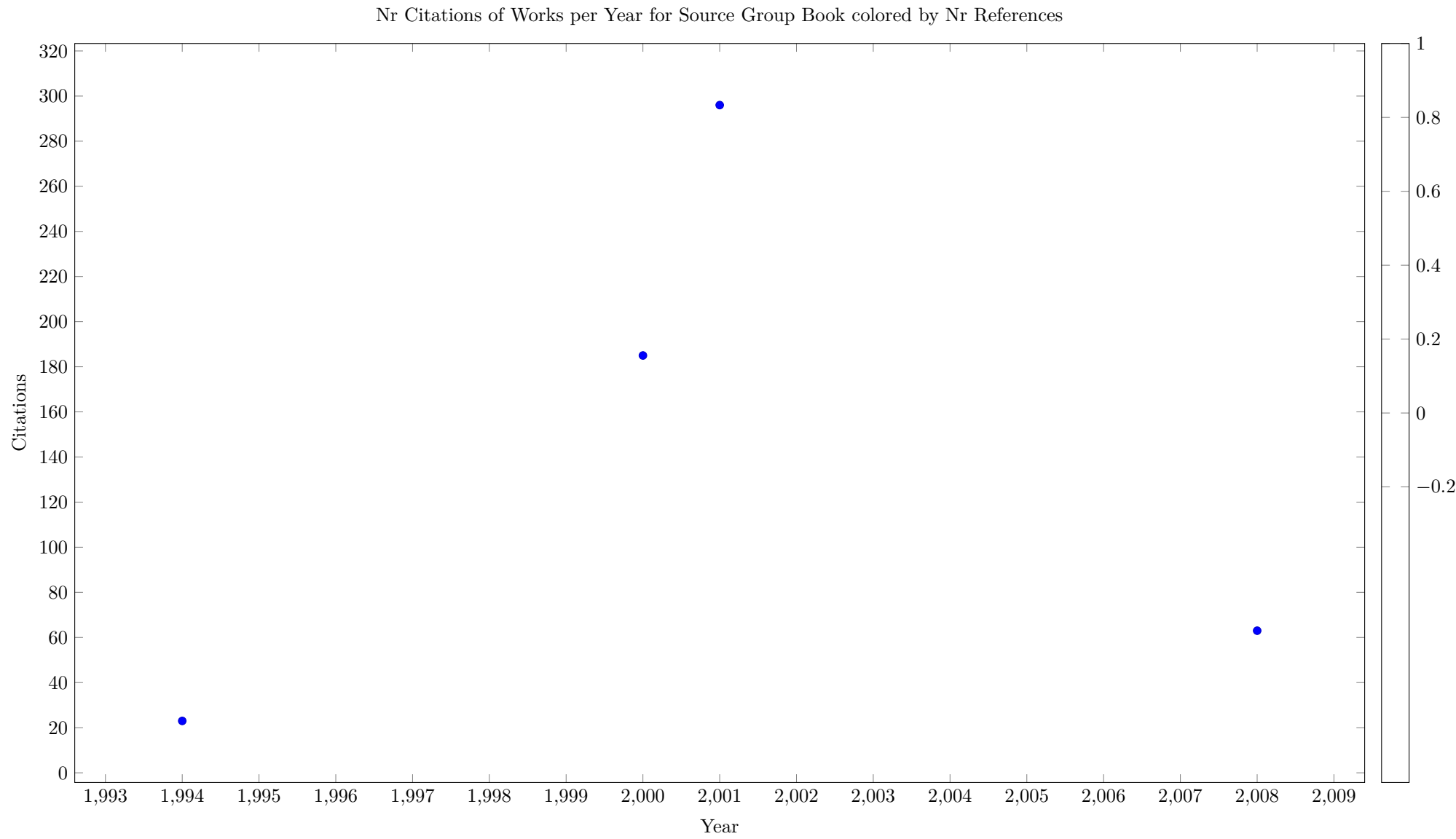


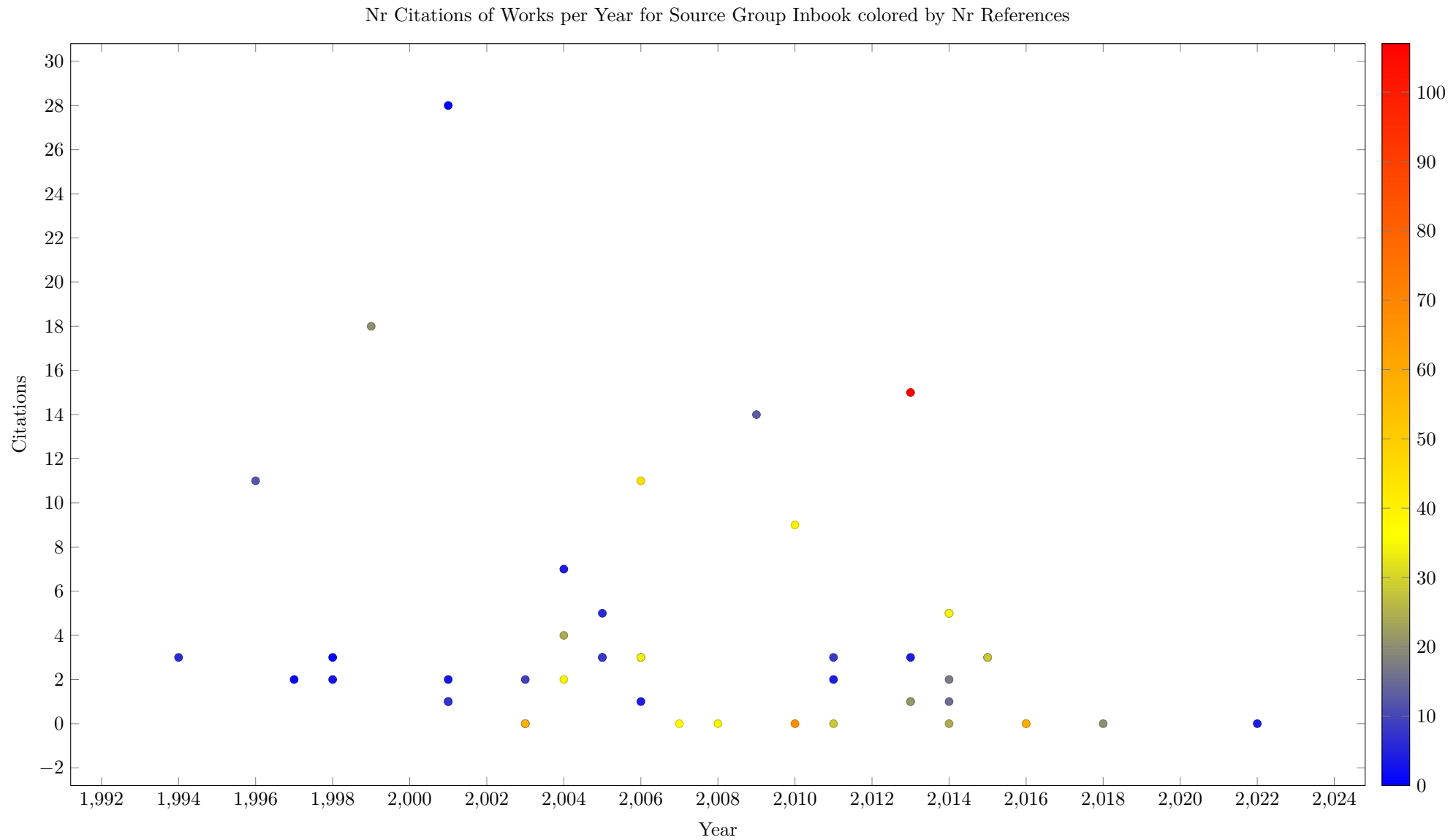




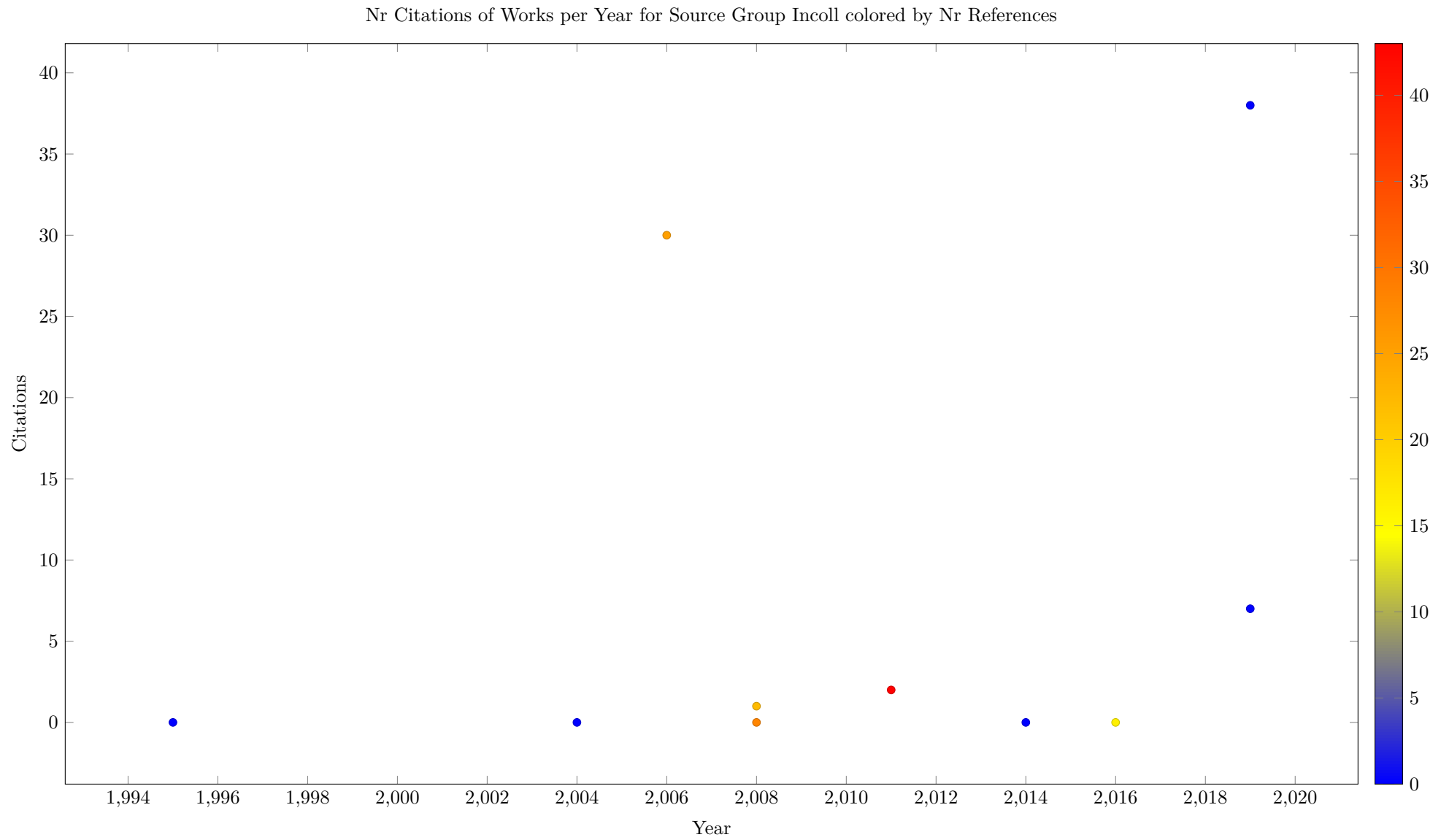


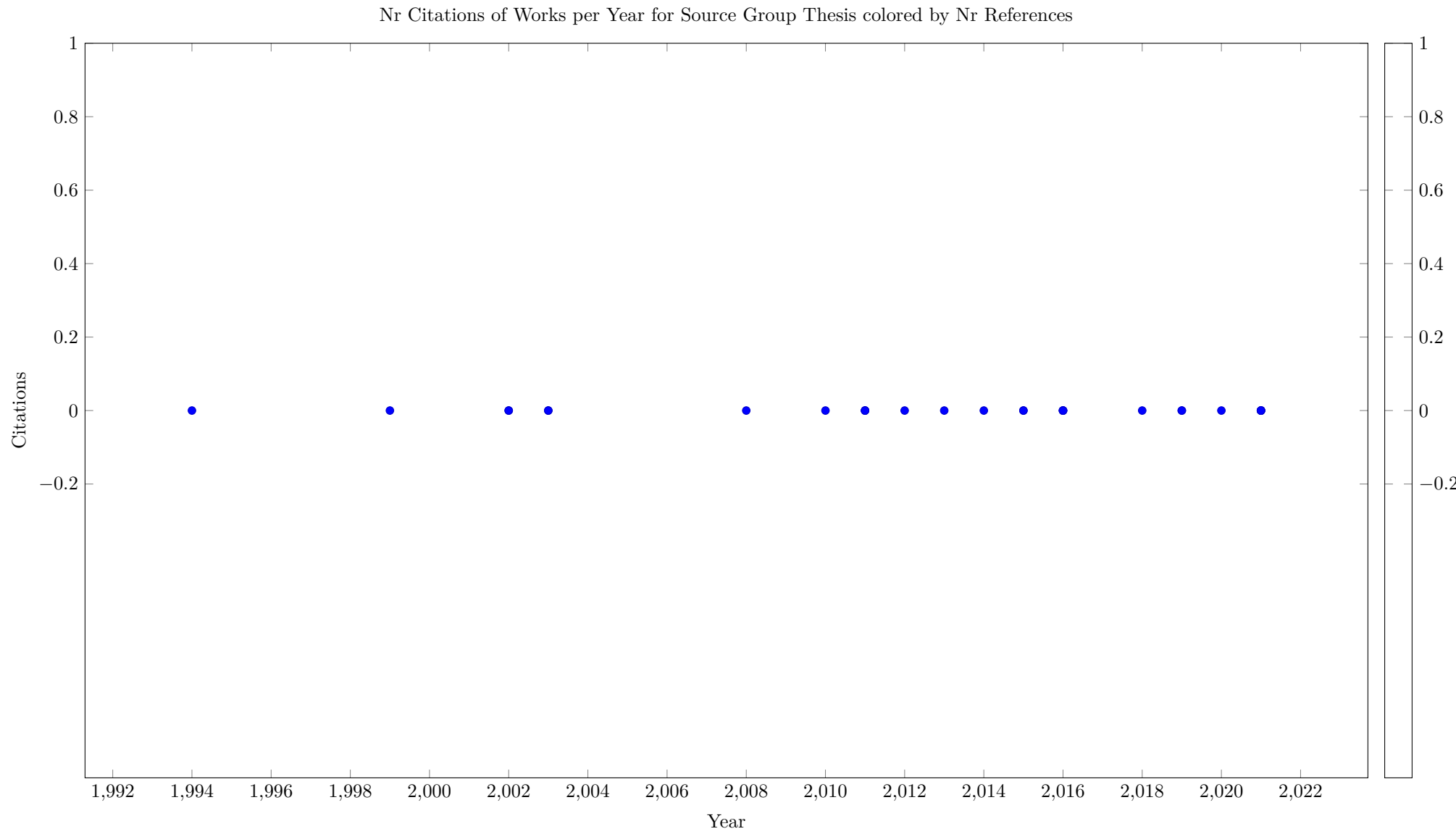












## 15.2 Reference Flows

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

Table 14: Reference Flows

	Background	CP	CPAIOR	ICAPS	AAAI	IJCAI	OtherConf	Constraints	EJOR	InformsJC	AIJournal	ORJournal	Preprint	OtherJournal	Book	Inbook	Incoll
Background	68	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.

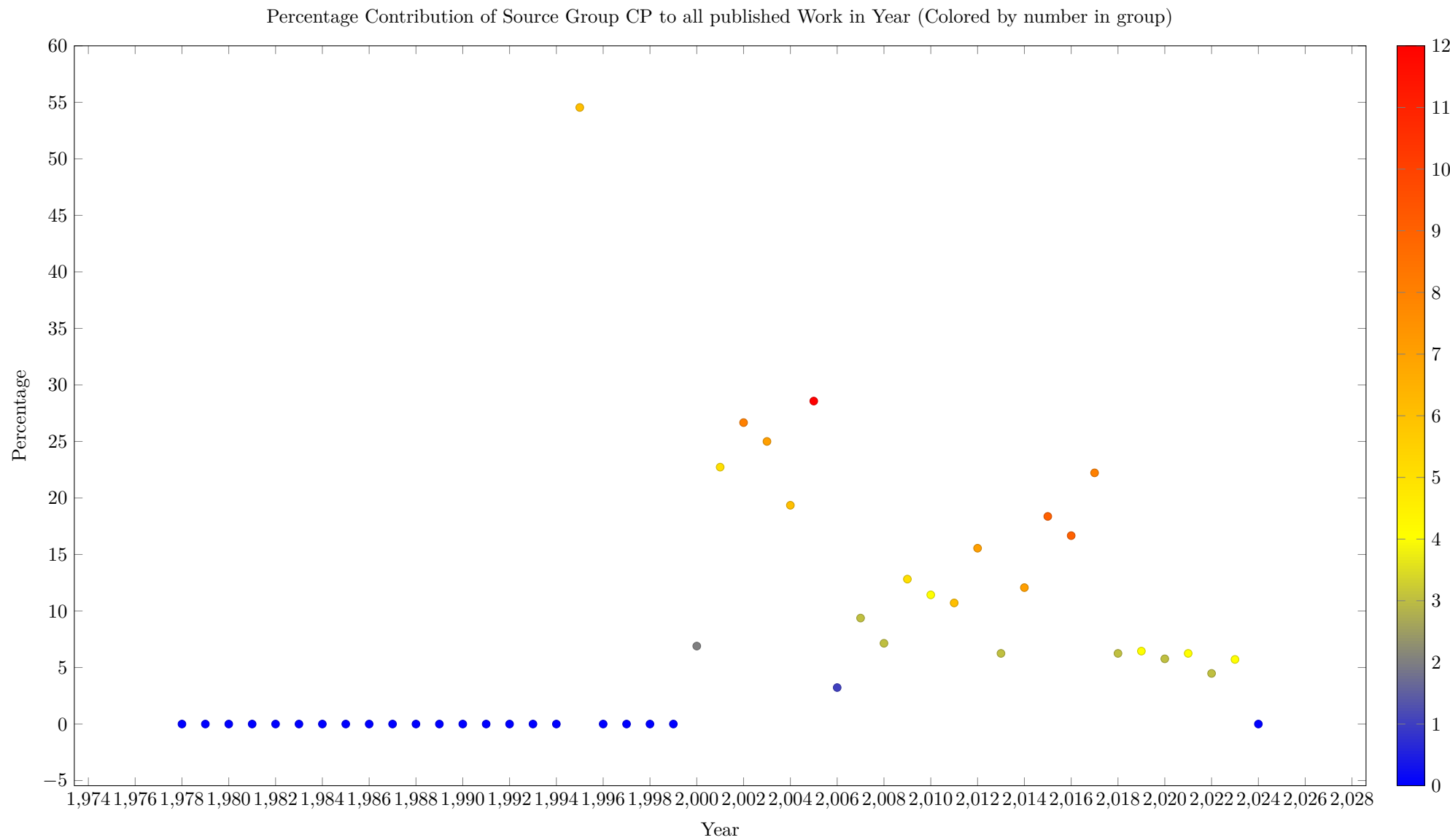
Note that the numbers are derived from the flows contained in the survey, which are based on the OpenCitation reference links. If such links are missing, or we are missing works in some group, then the results will be affected.

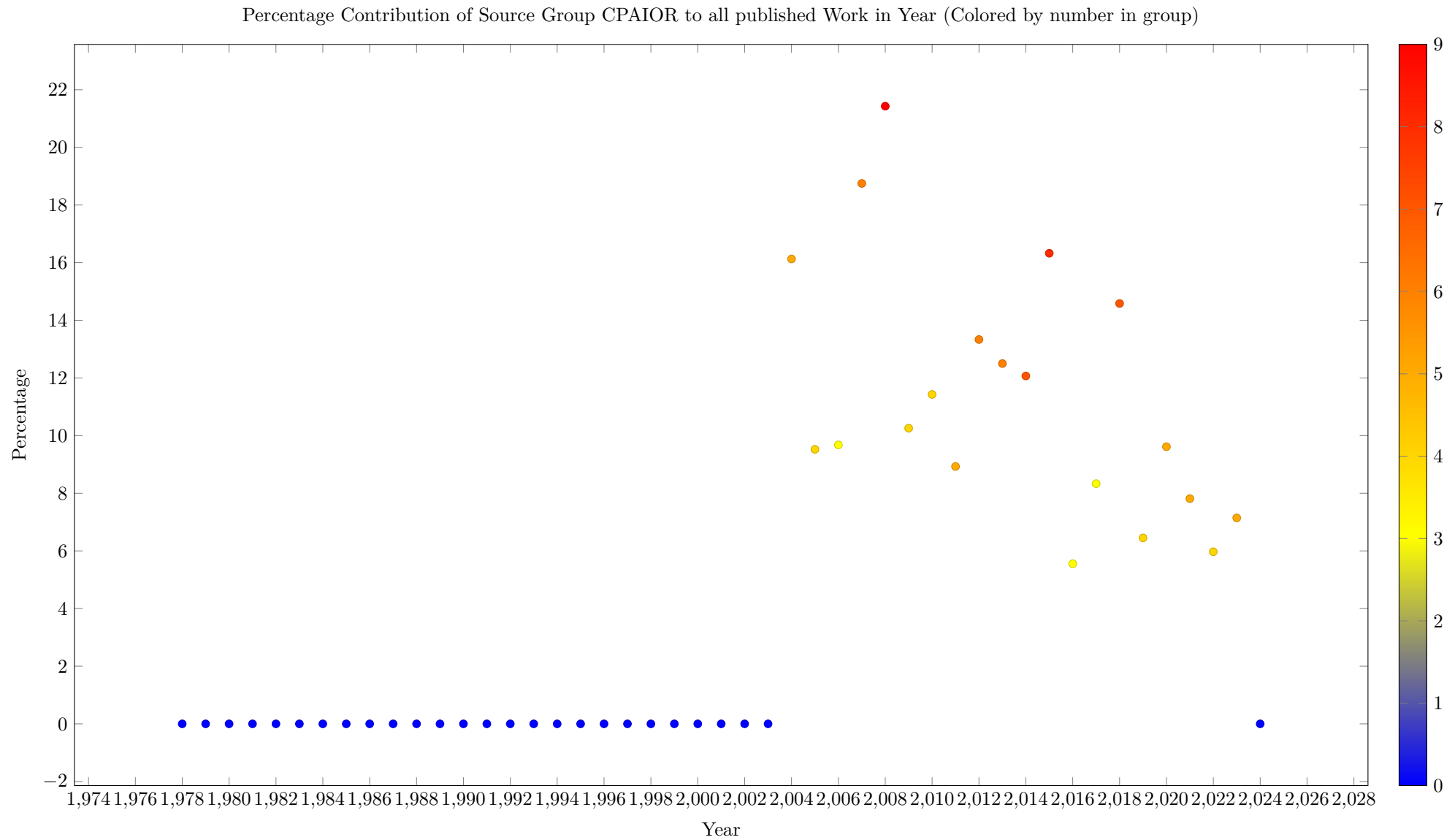
Table 15: Reference Flows Normalized

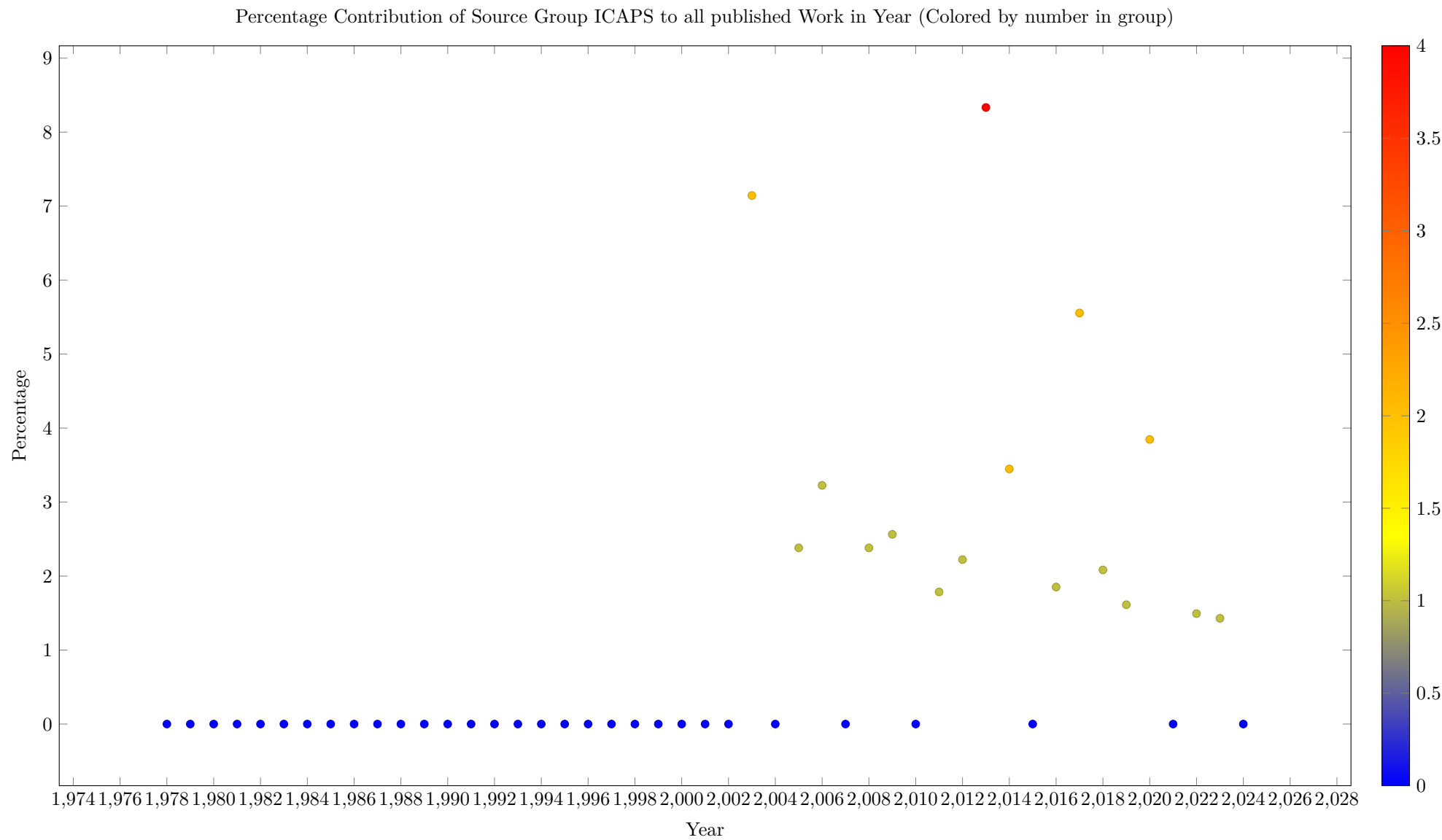
	Background	CP	CPAIOR	ICAPS	AAAI	IJCAI	OtherConf	Constraints	EJOR	InformsJC	AIJournal	ORJournal	Preprint	OtherJournal	Book	Inbook	Incoll
Background	3.68	0.26	0.07				0.03	0.59	0.58	1.58	0.22	0.85		0.18	3.49	0.20	
CP	2.04	0.73	0.52	0.07	0.01	0.03	0.08	0.64	0.14	0.68	0.65	0.21		0.15	5.11	0.07	0.30
CPAIOR	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	1.09	0.19	0.15				0.07	0.34	0.25	0.34	0.44	0.19		0.14	1.66	0.10	0.07
Constraints	3.12	0.93	0.89	0.19			0.14	1.09	0.33	1.03	0.81	0.50		0.34	9.57	0.14	0.21
EJOR	4.51	0.05	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			0.25	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					0.13	0.64	1.56	0.32	2.38	0.88		0.15	5.00	0.22	

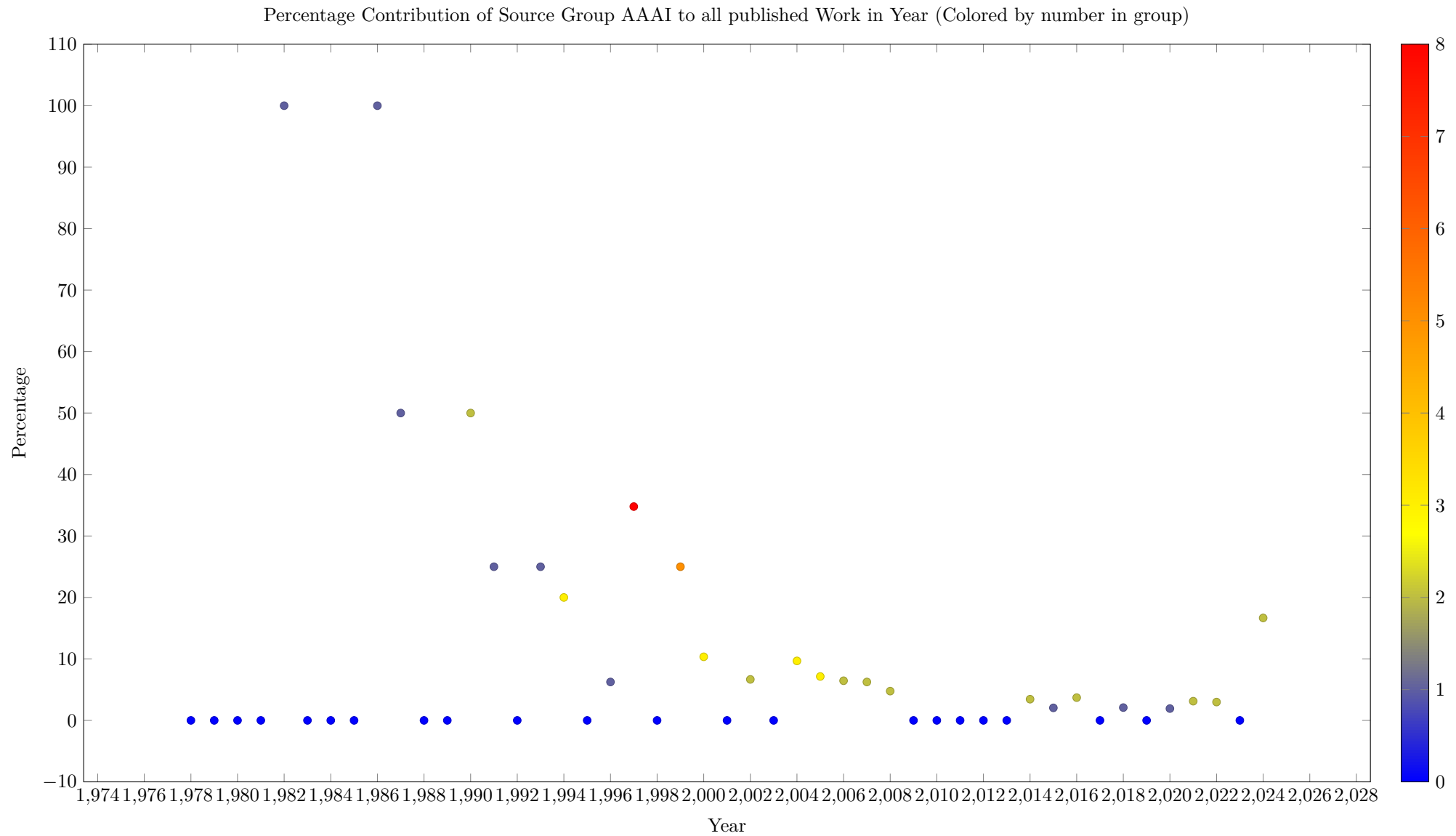
## 16 Contribution of Source Group to Total Works per Year

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

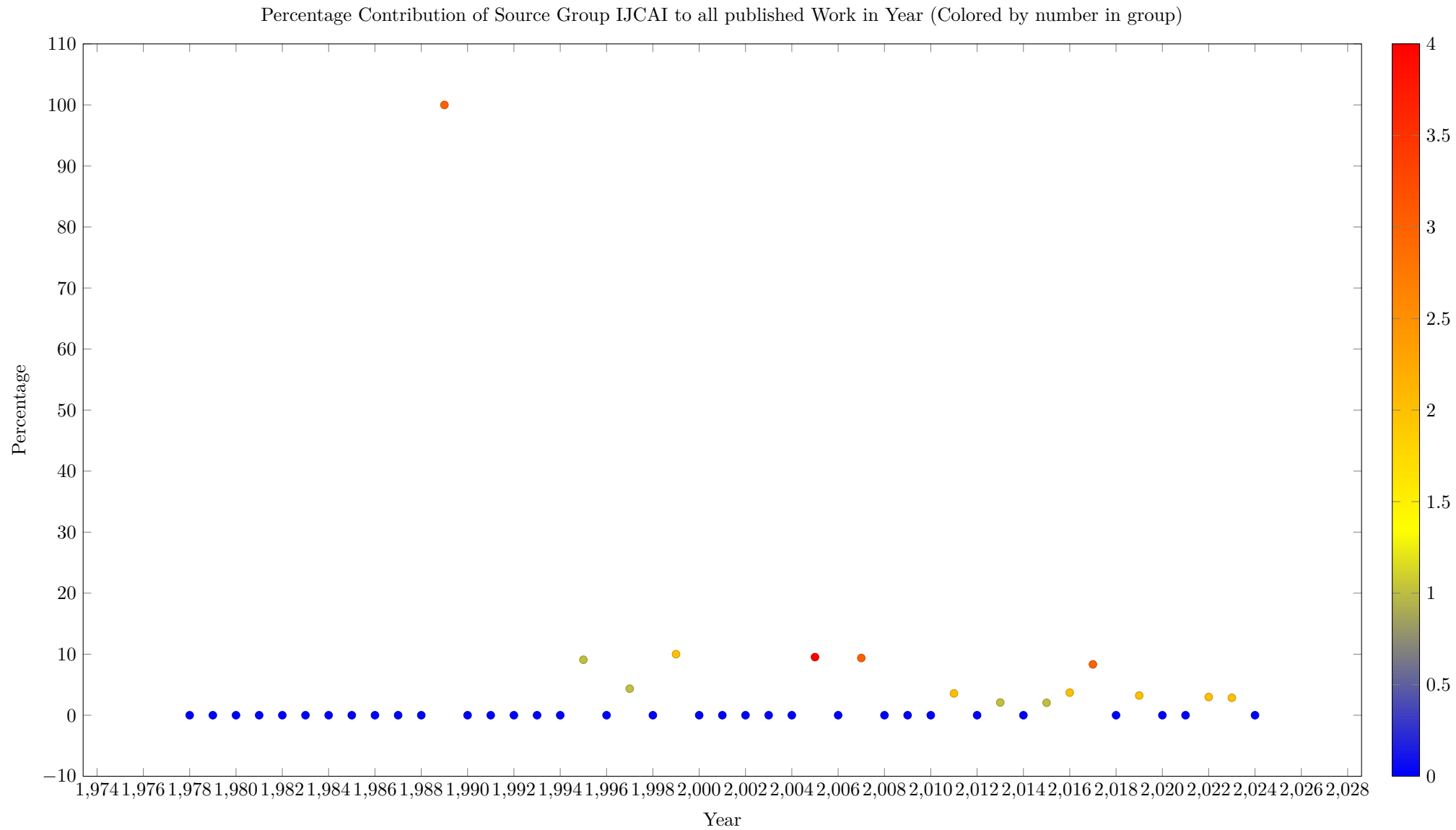


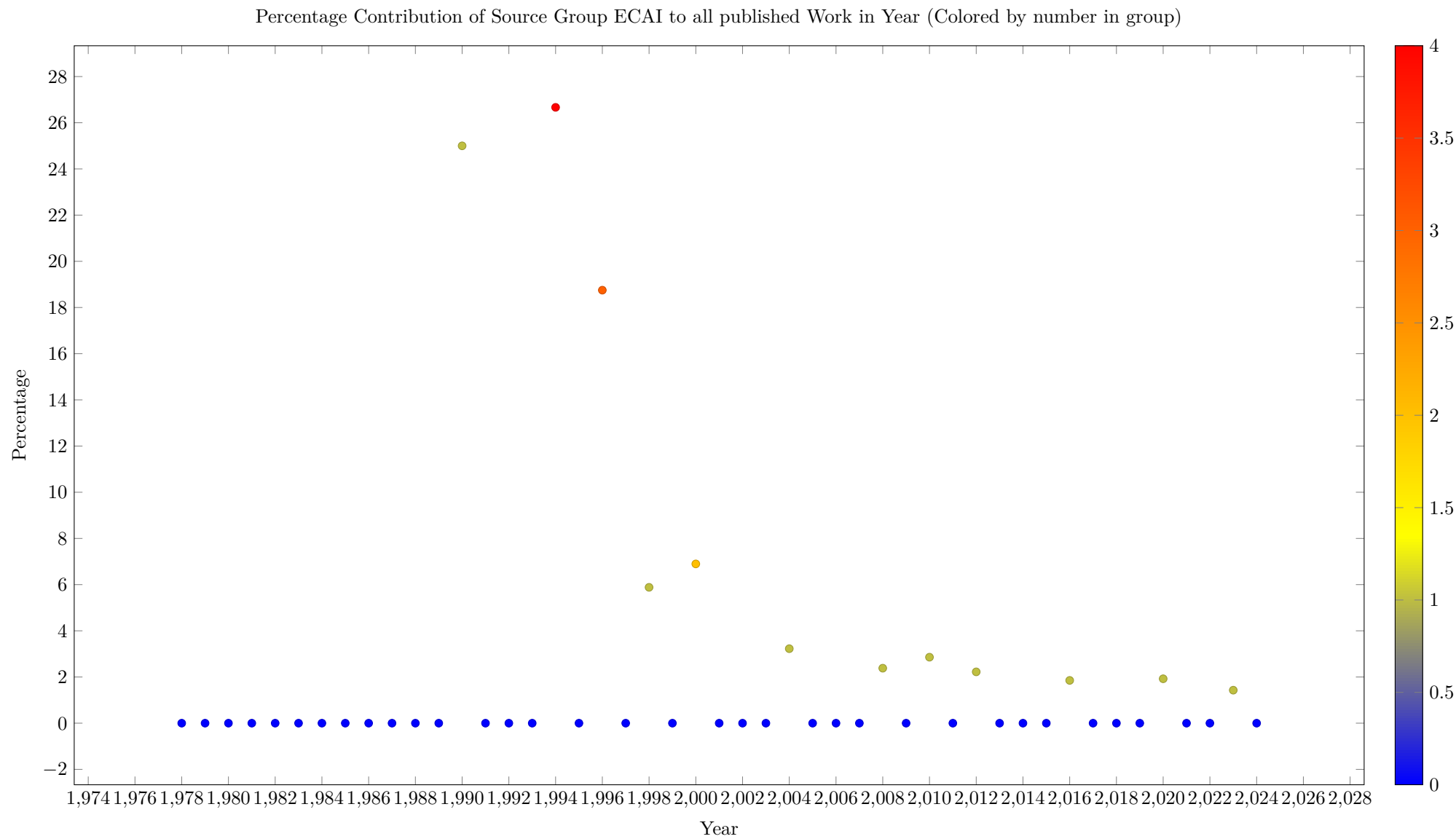


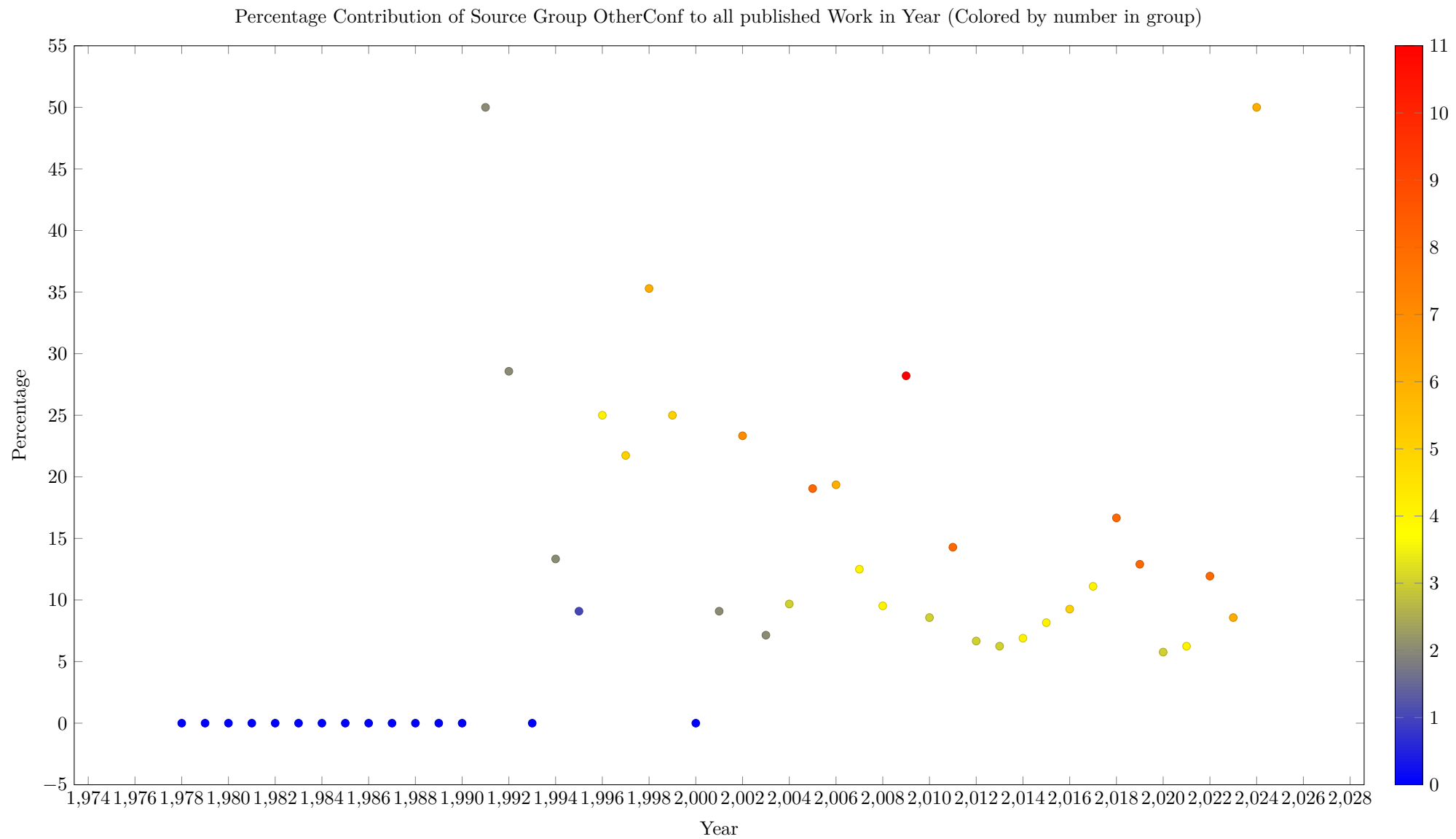


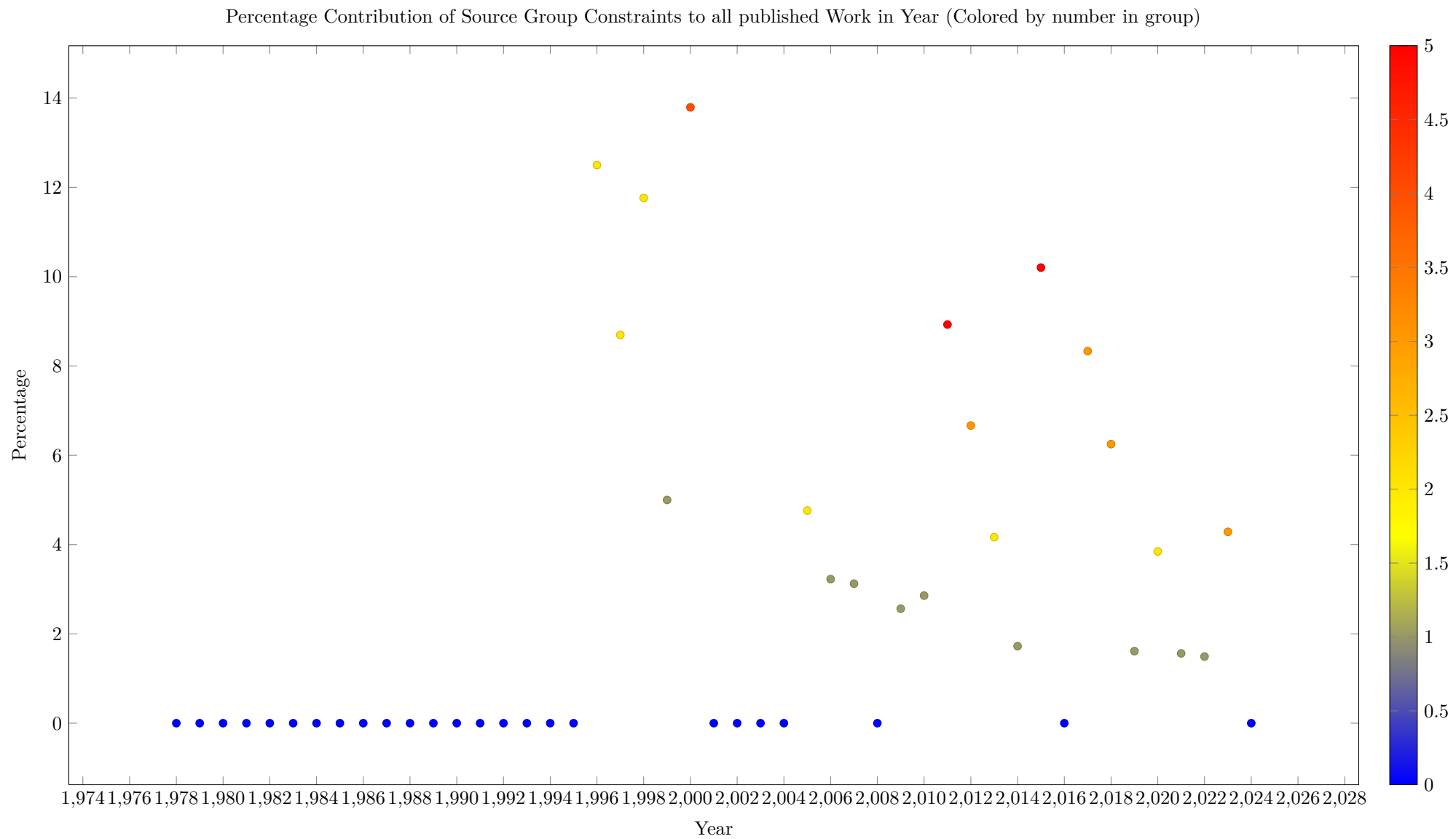


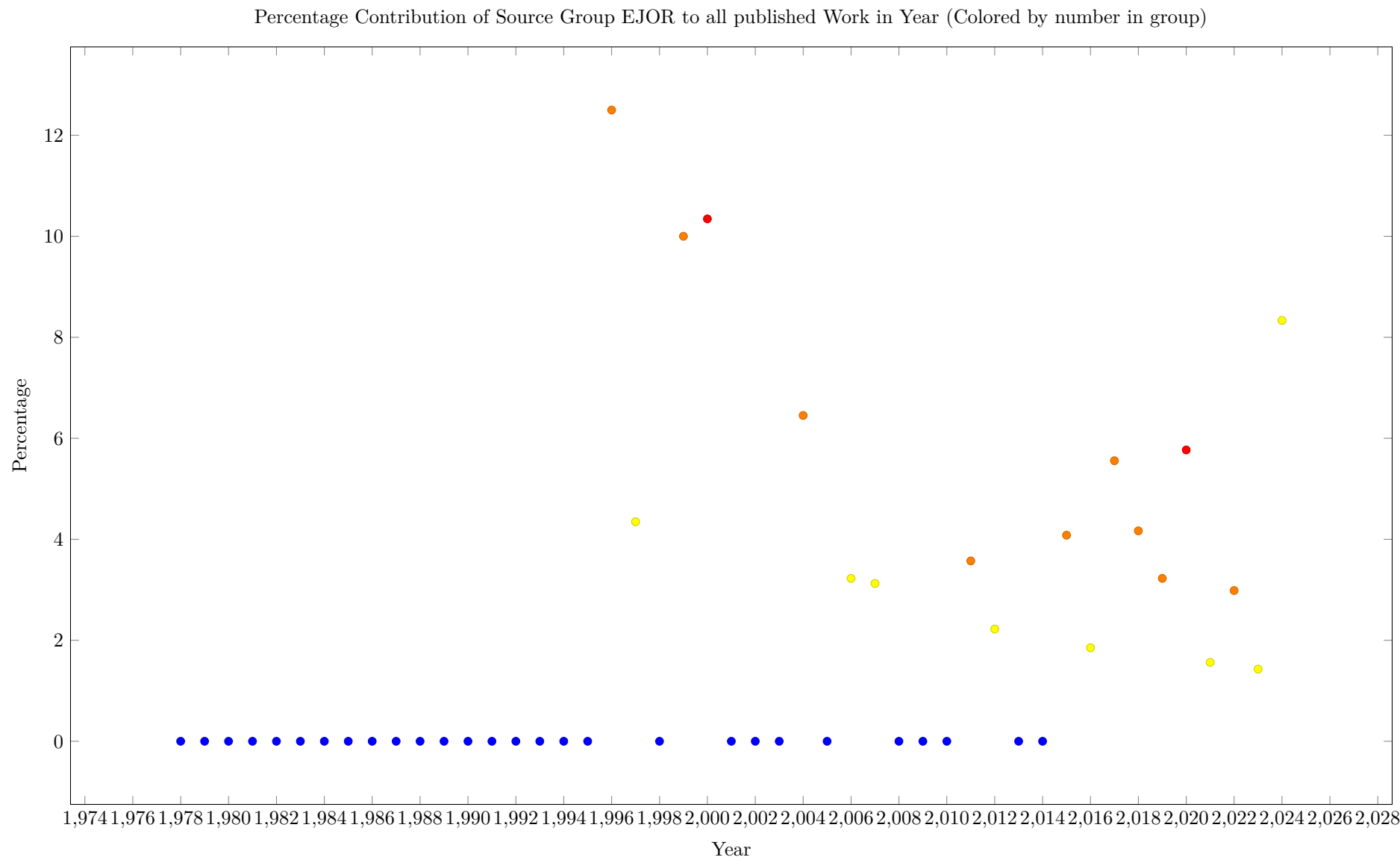


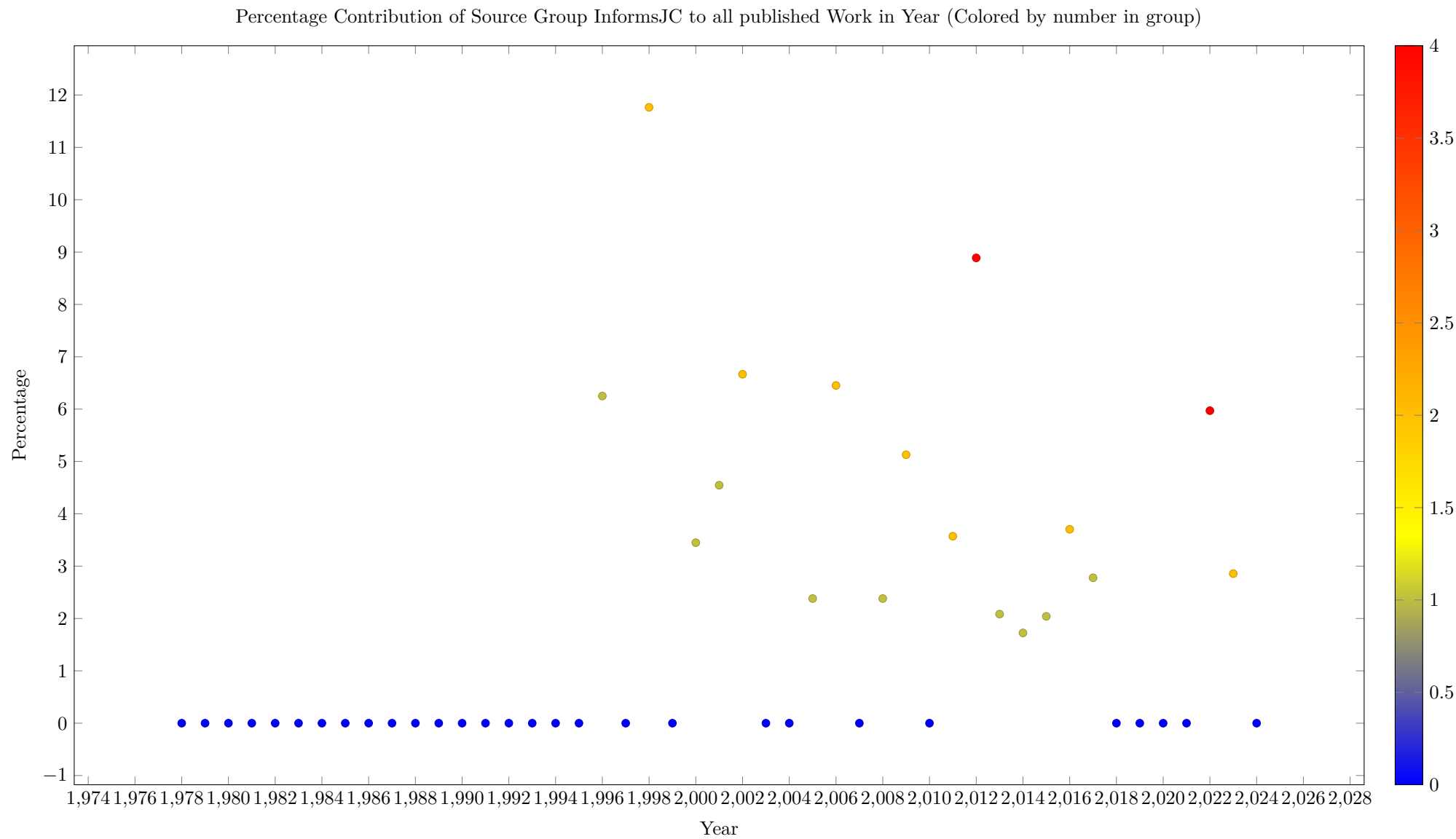


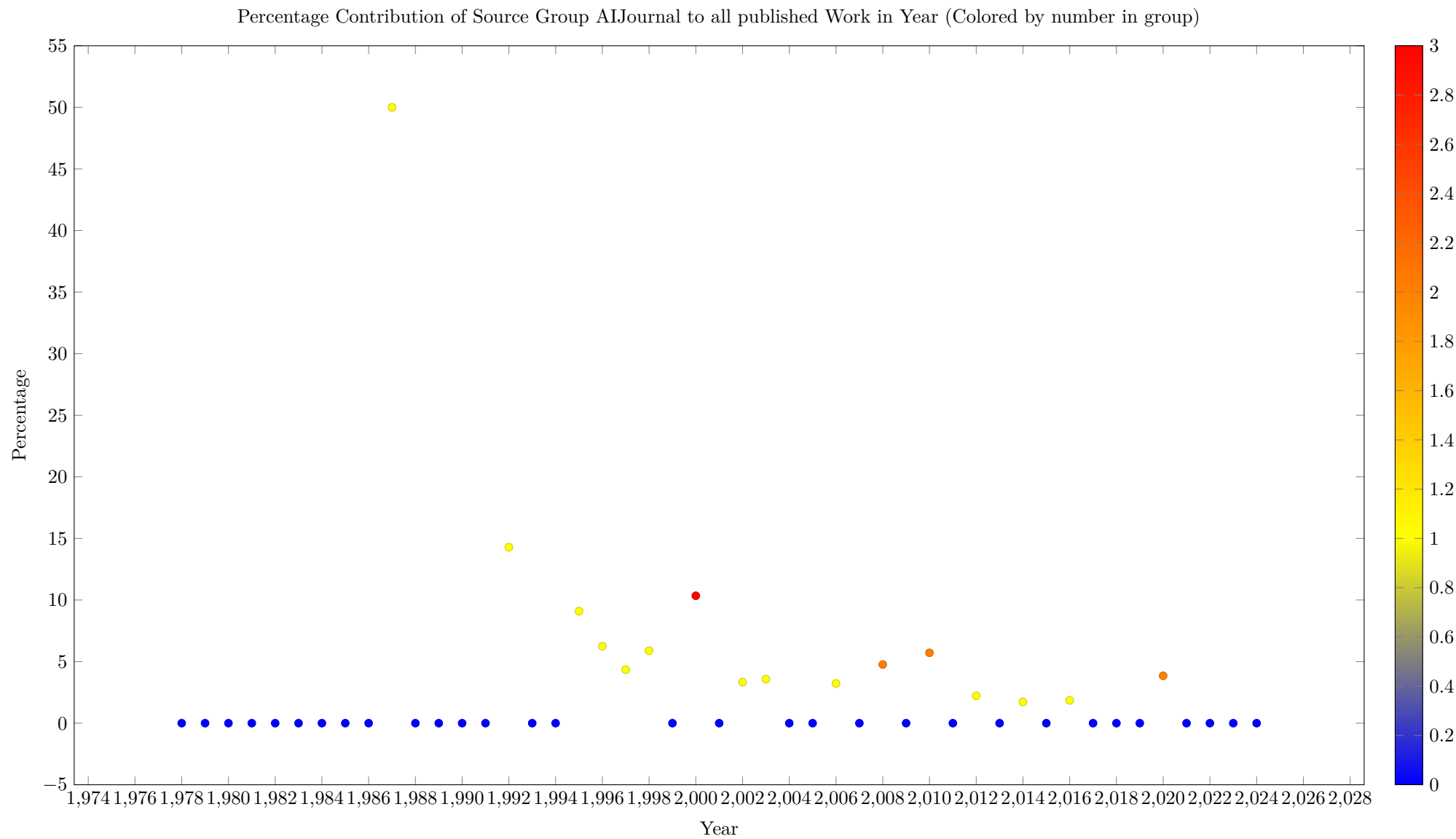


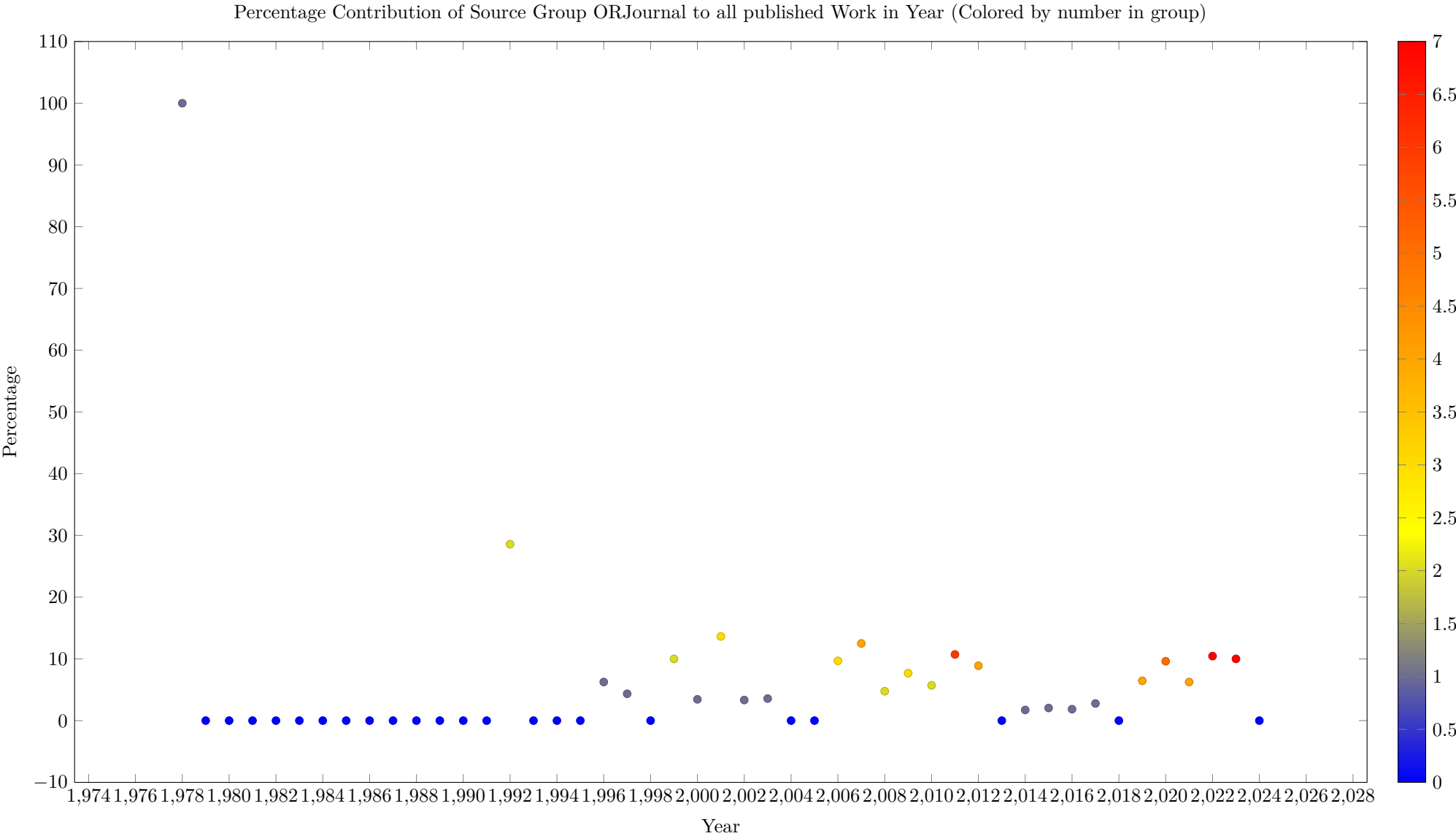




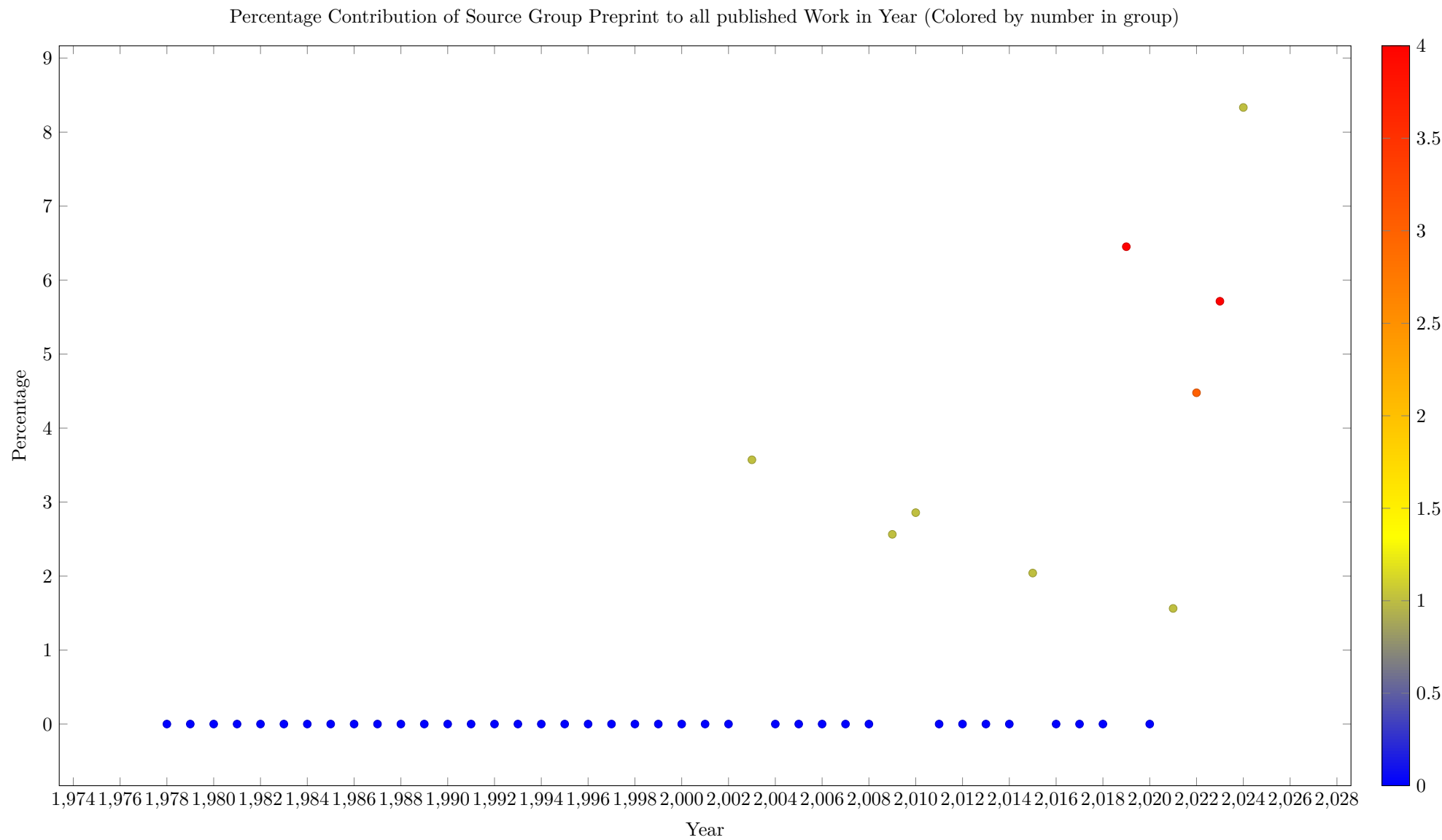


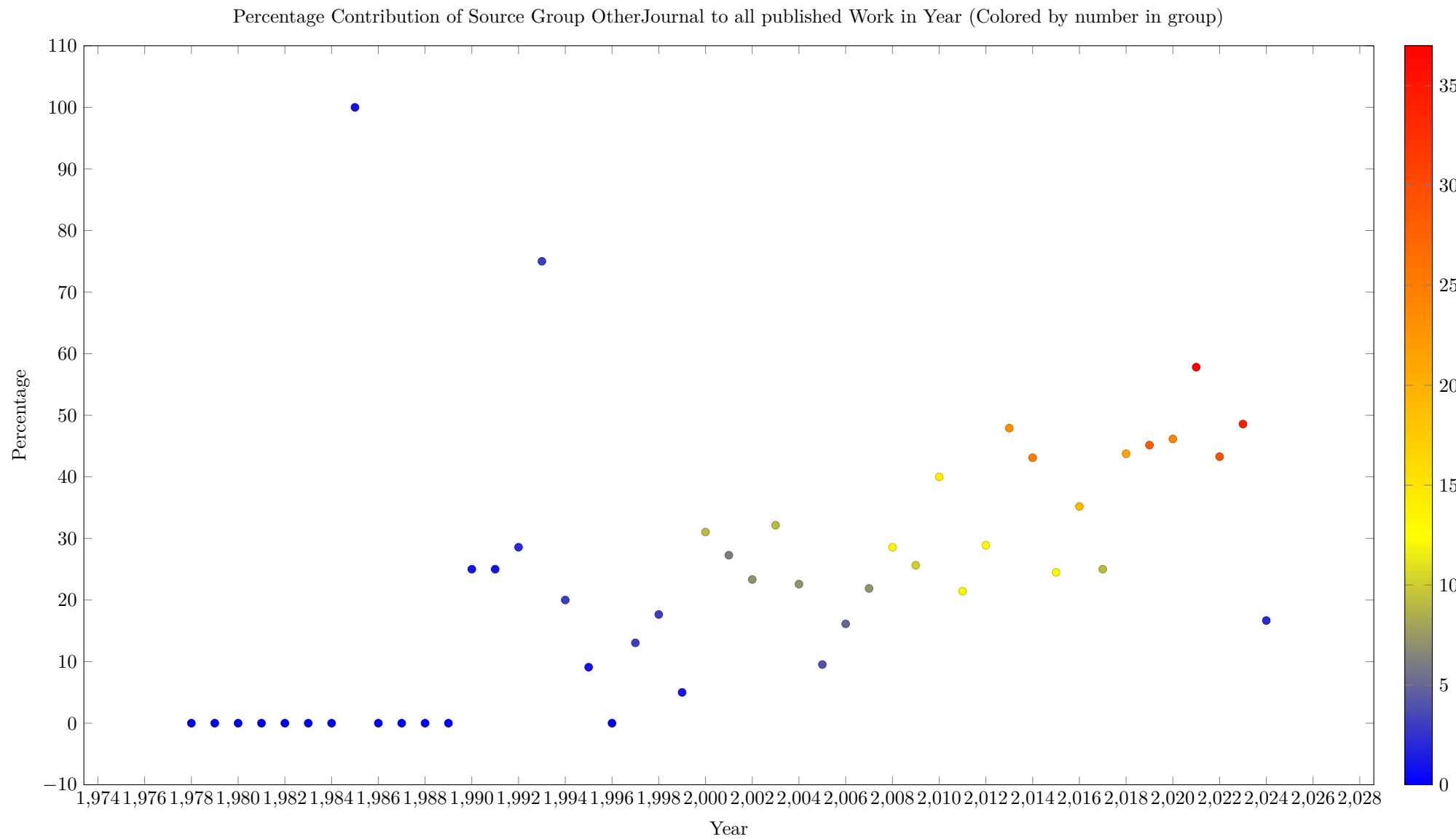


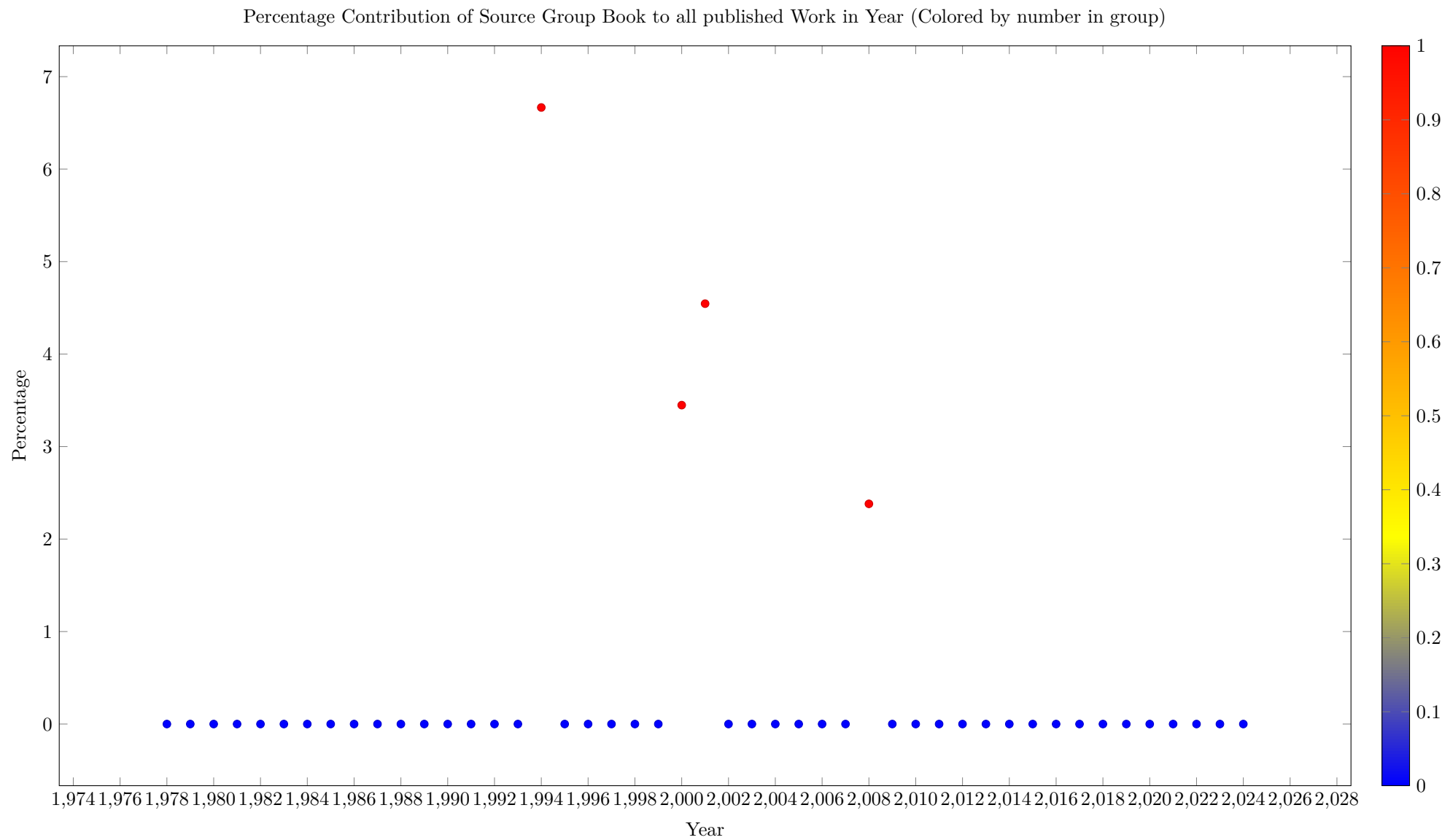


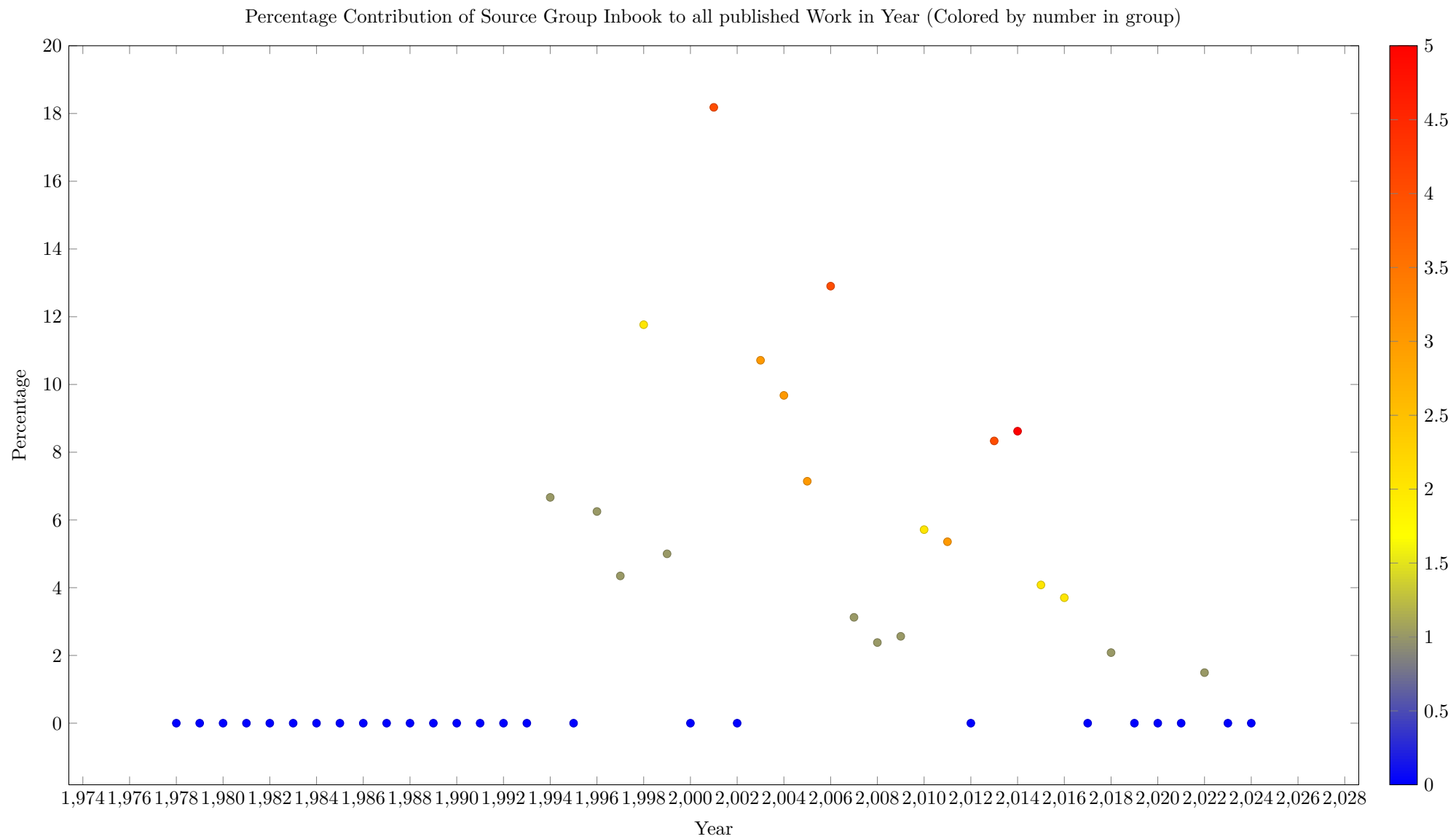


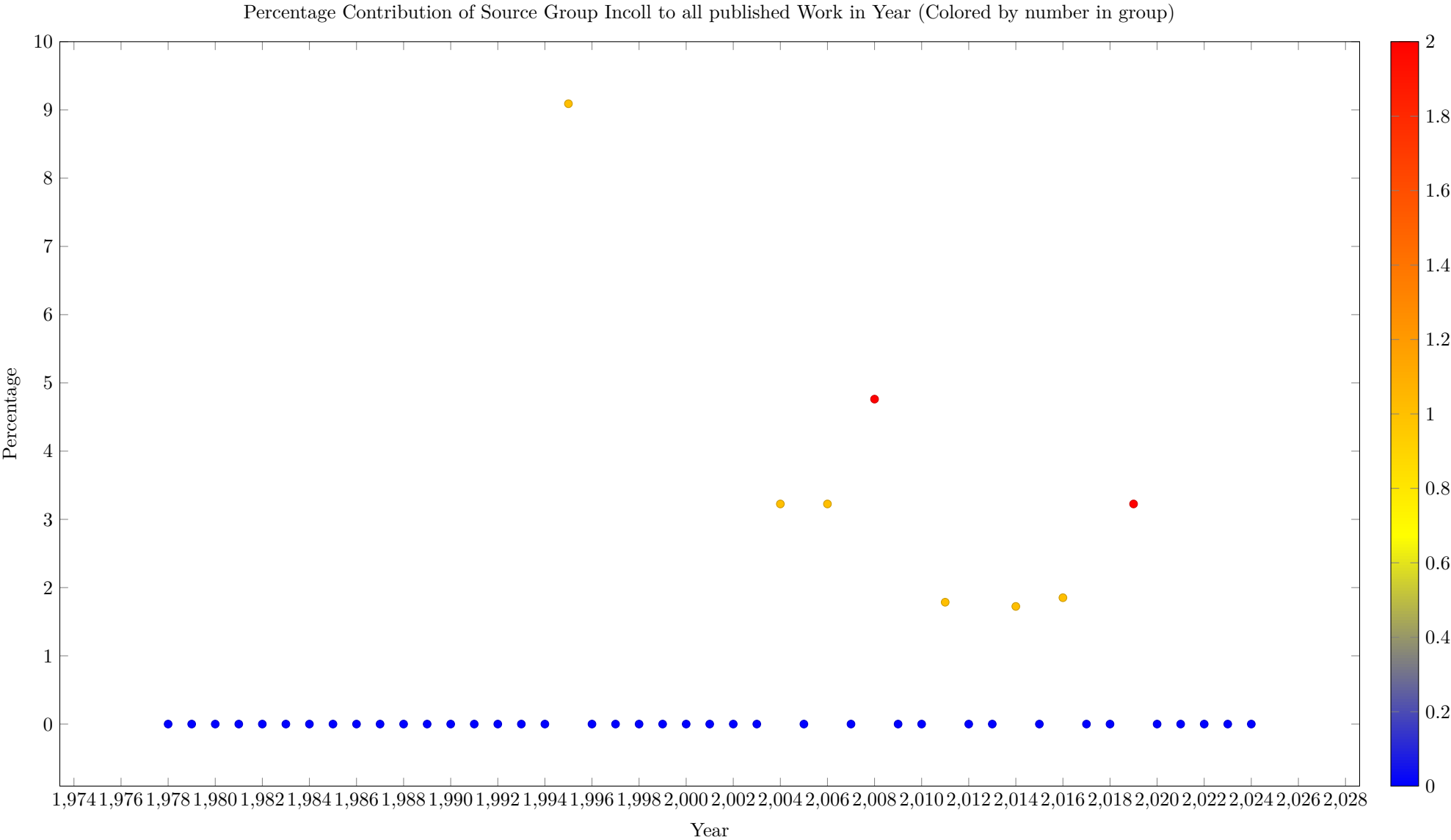


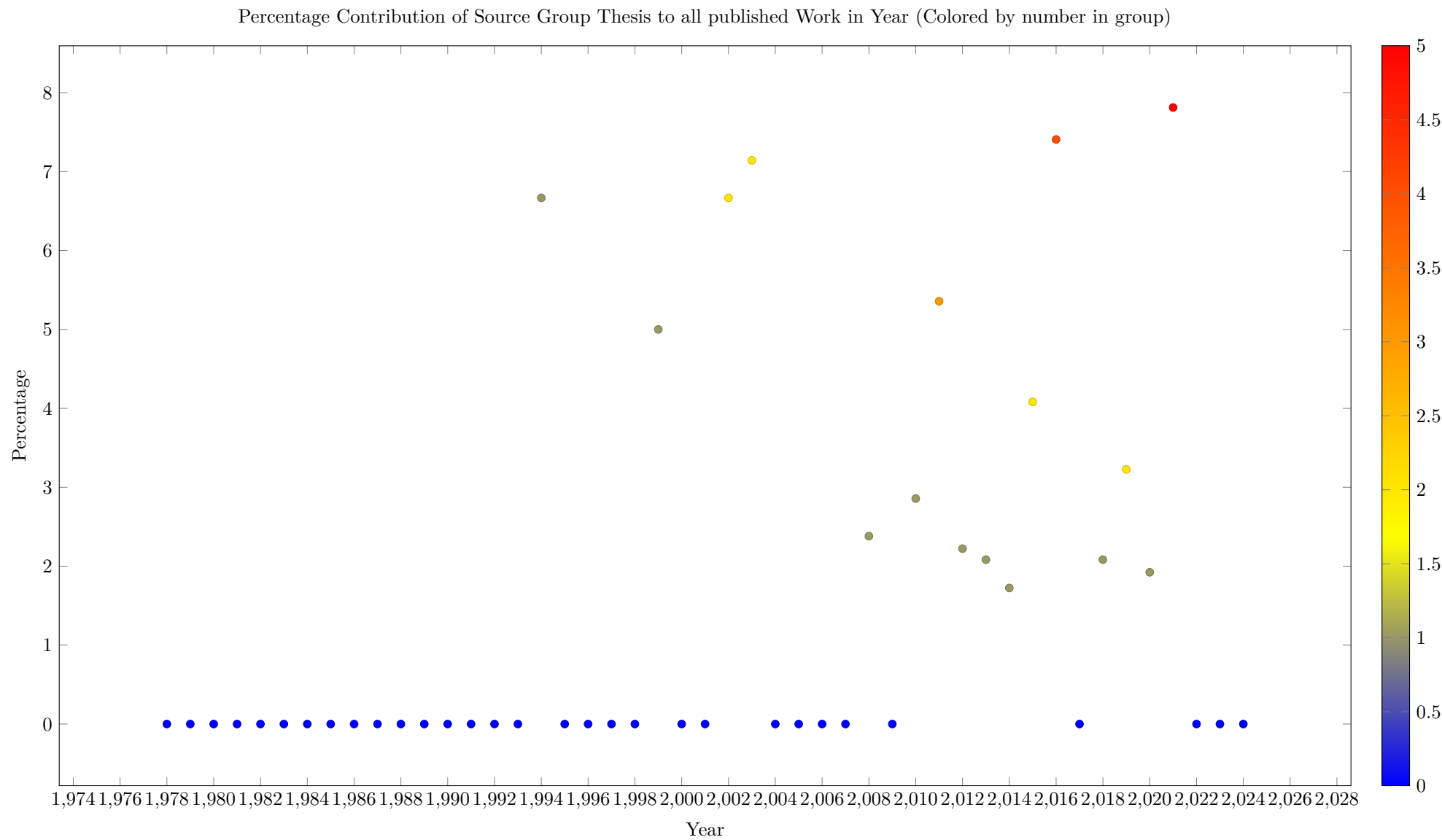




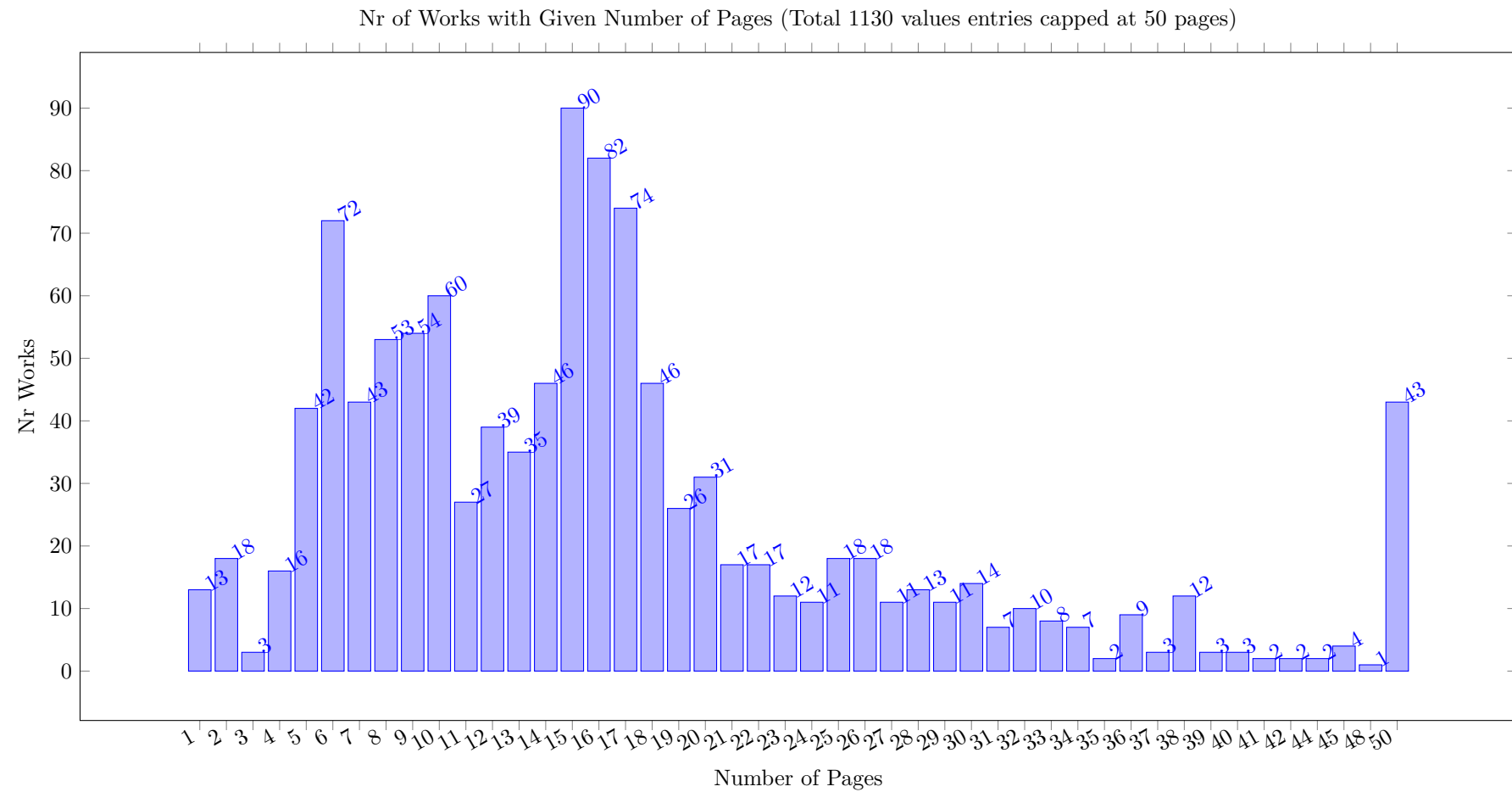








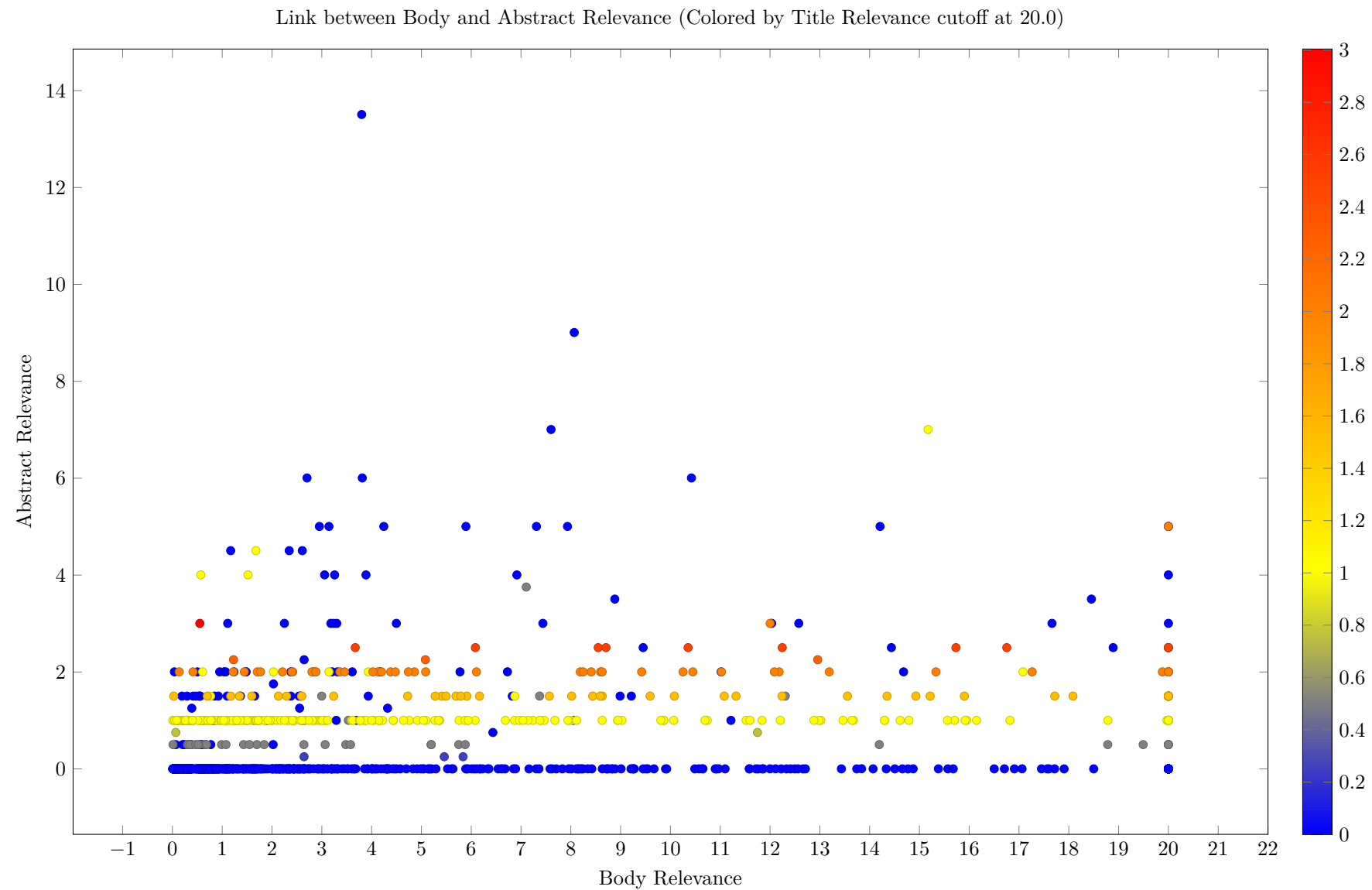
## 17 Page Length Distribution

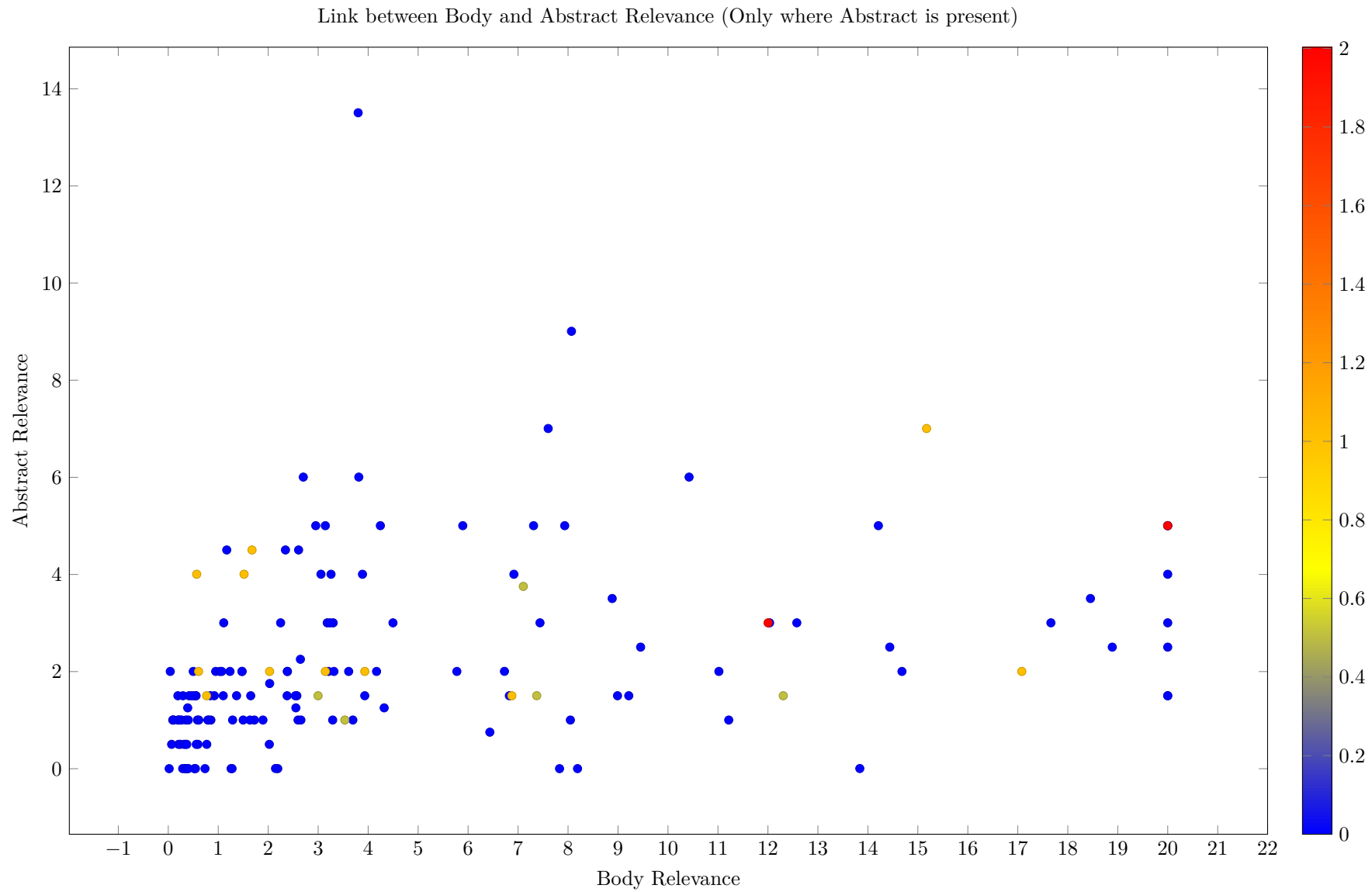


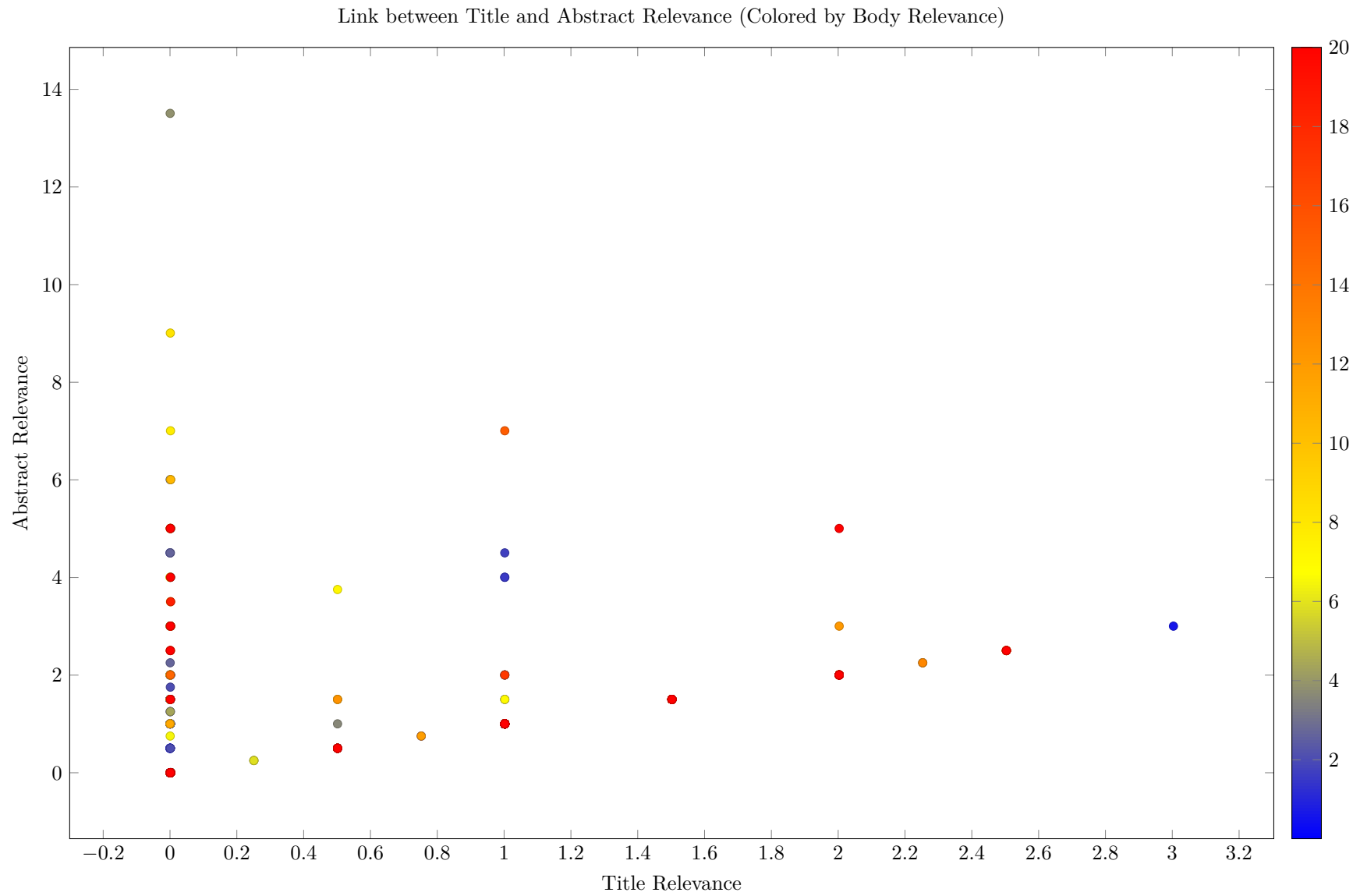


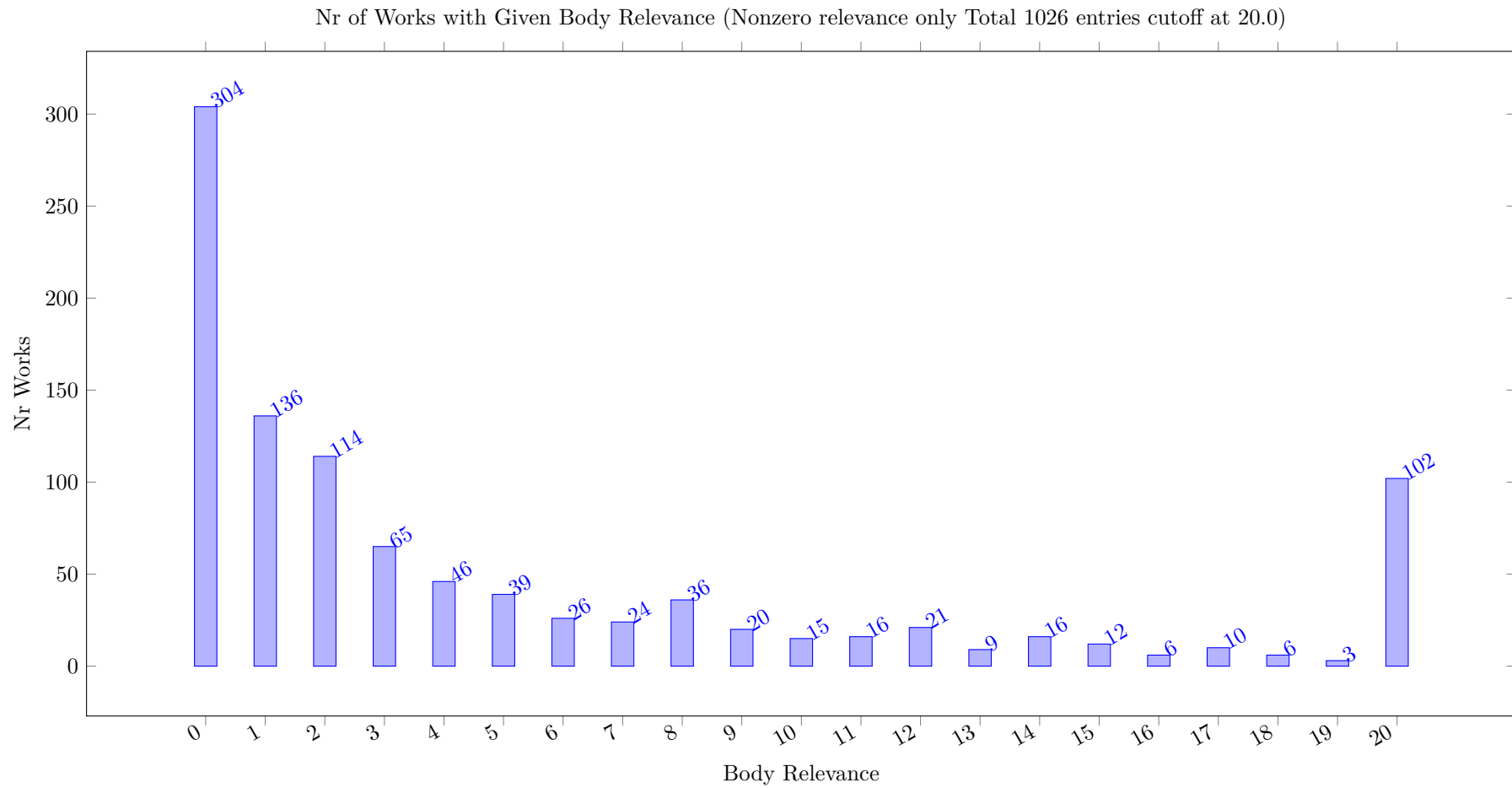


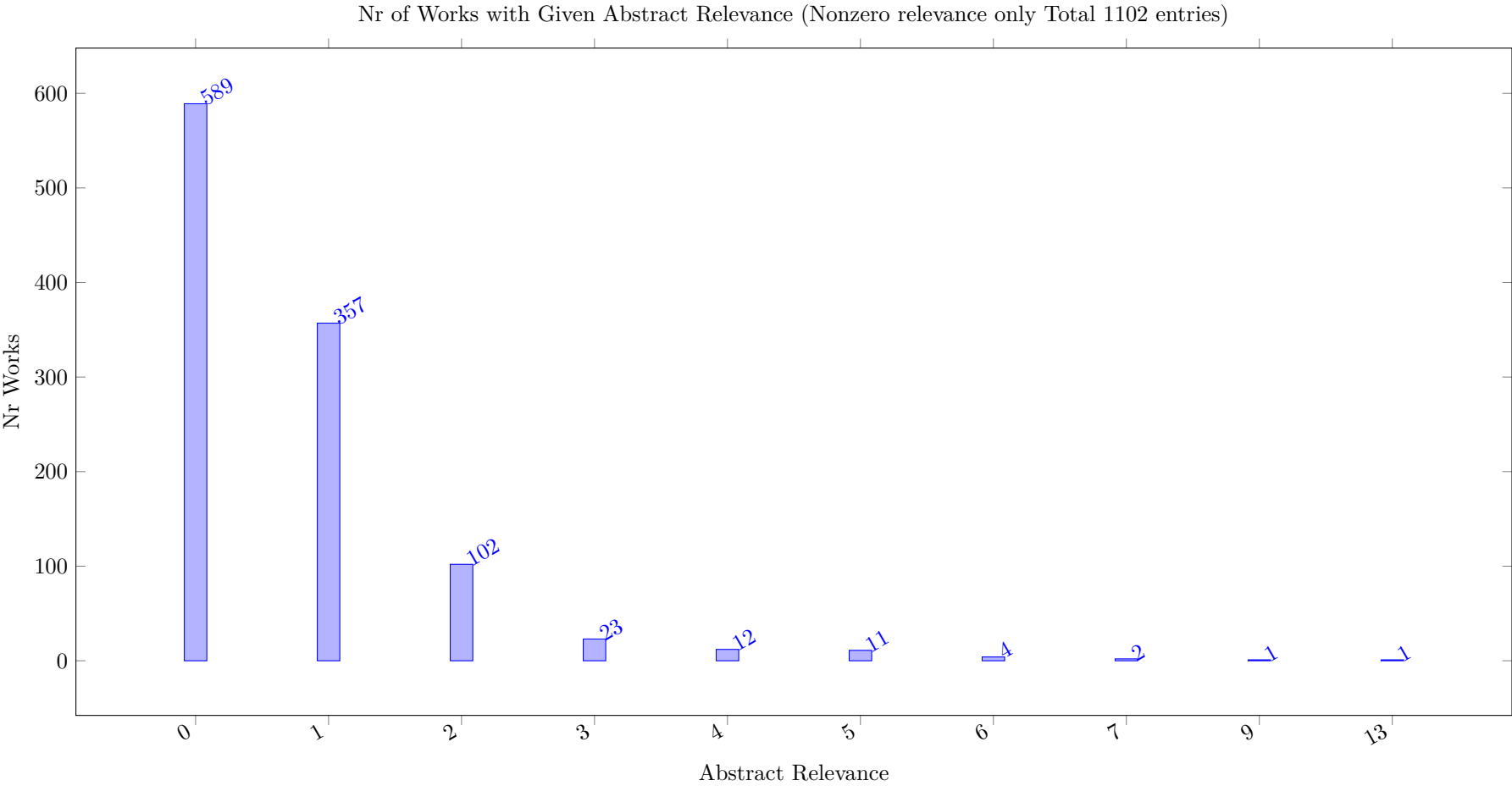
## 18 Relevance Distribution

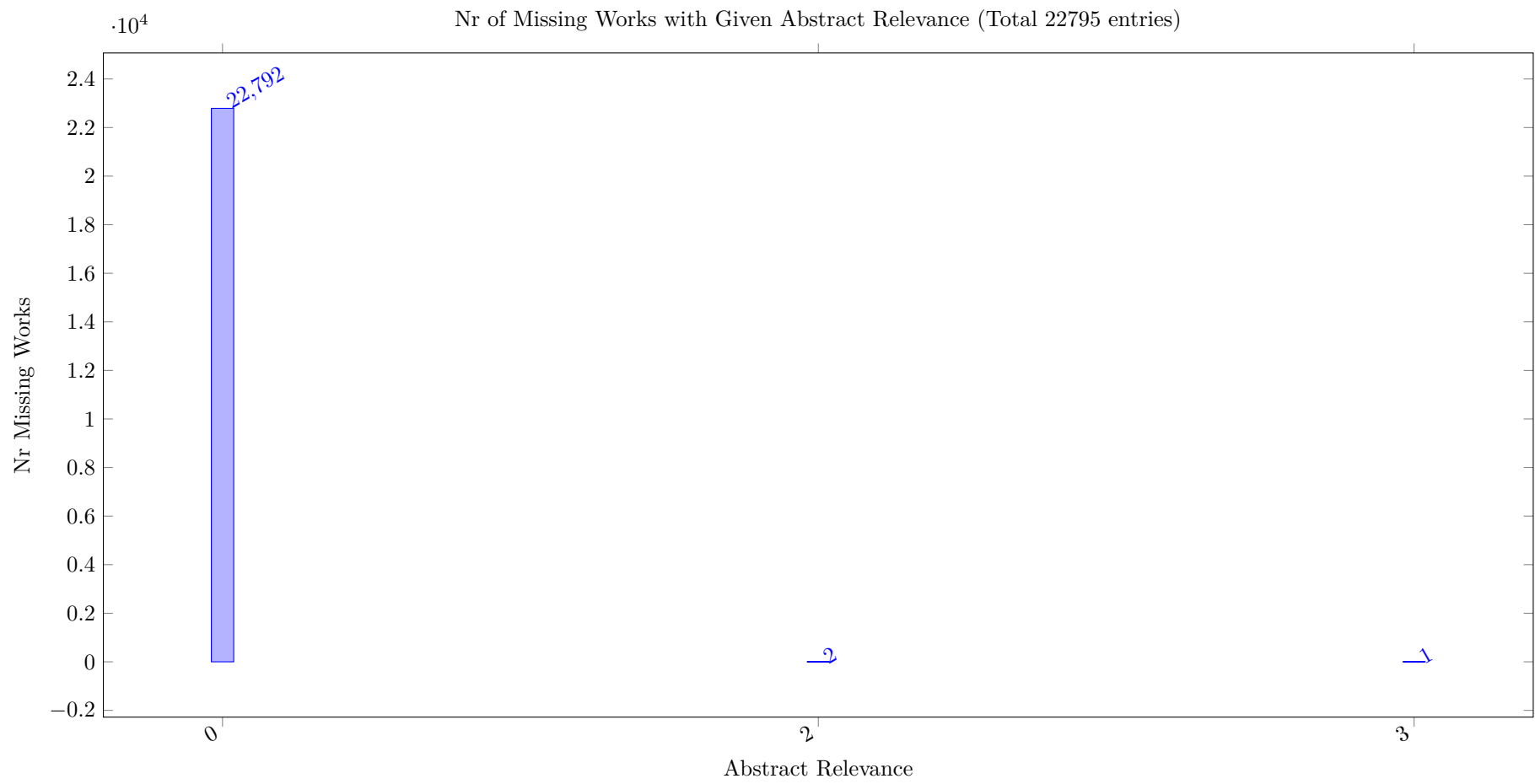


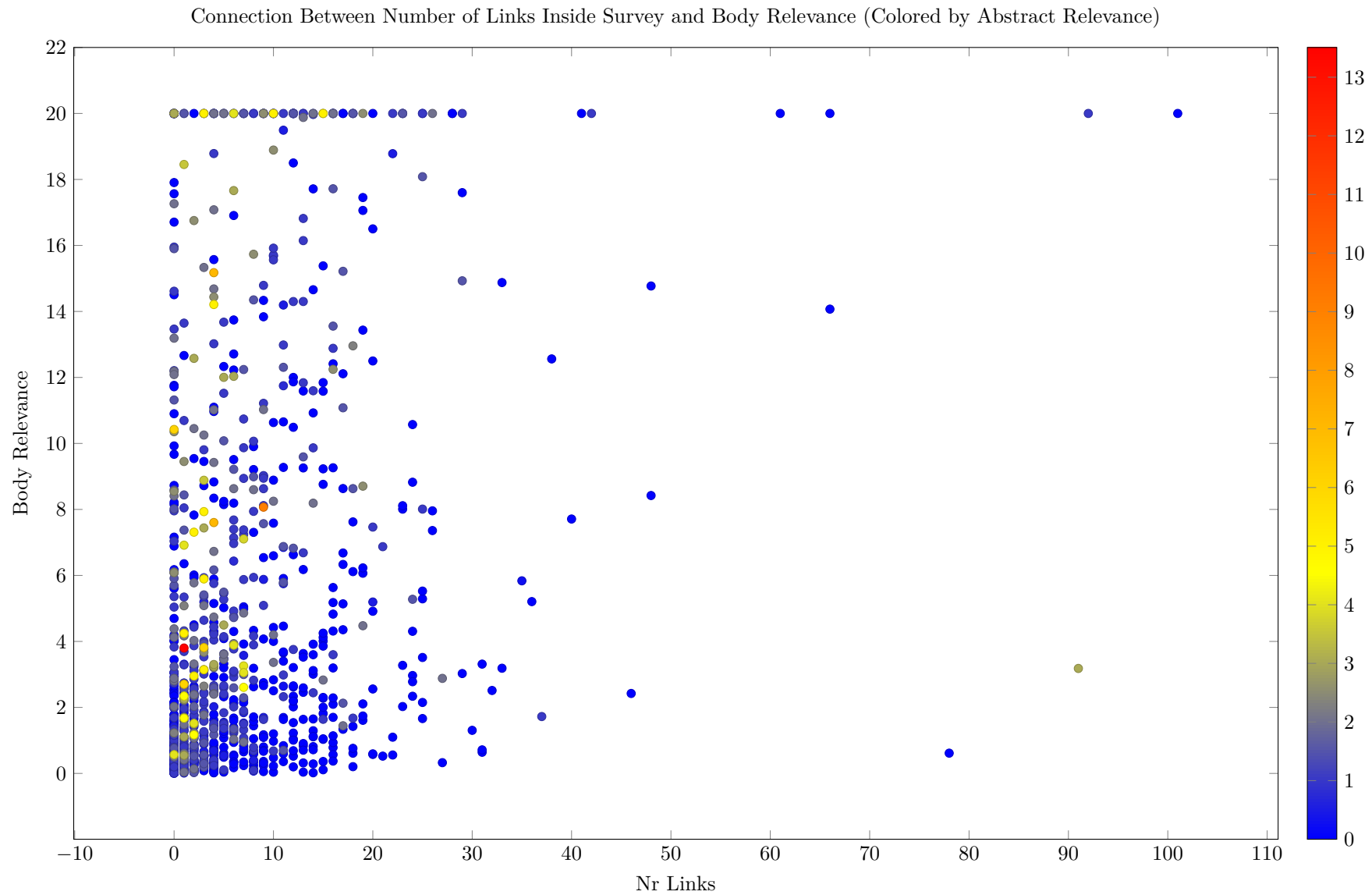


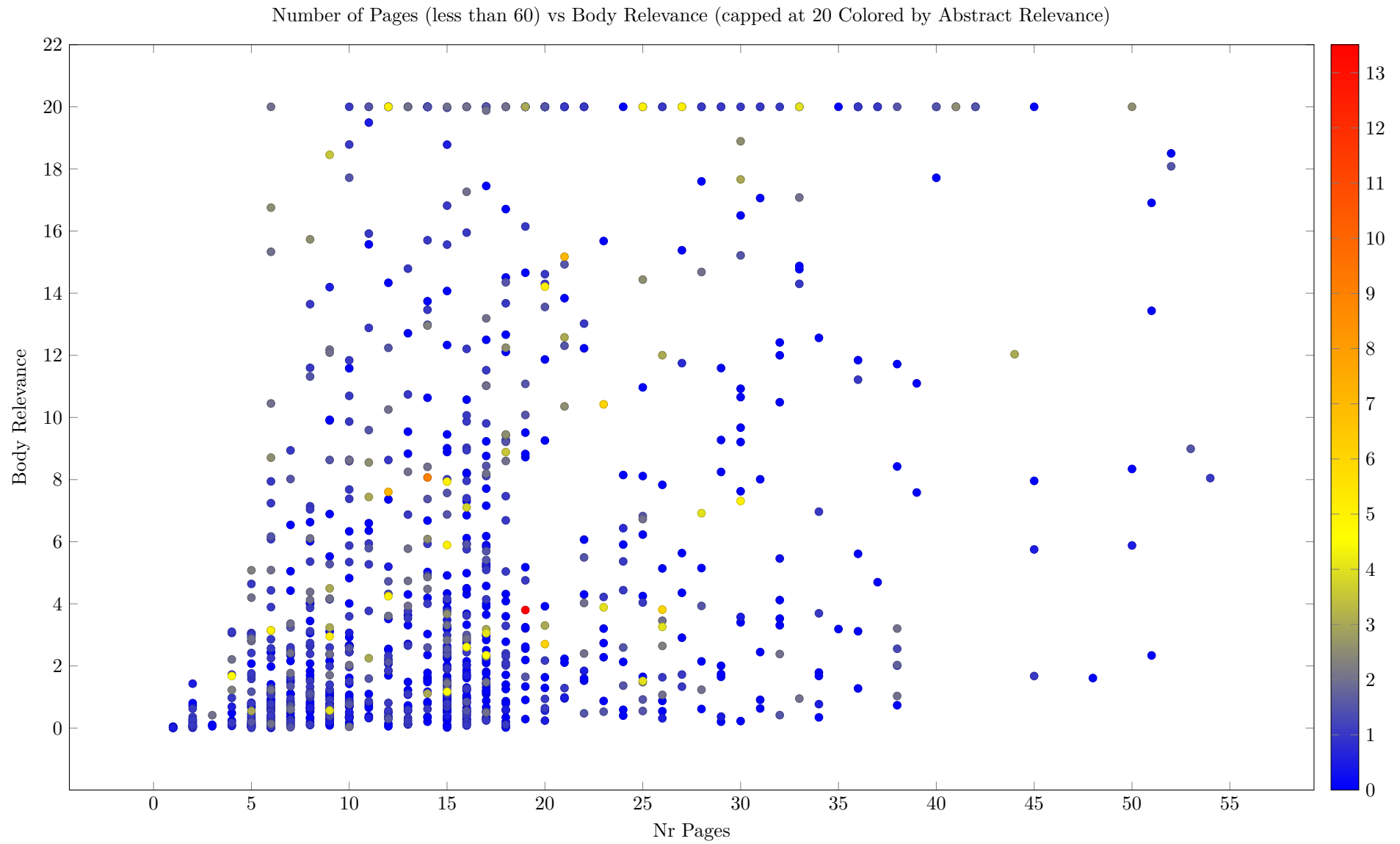














19 Most Important Publishers

