

# Publication Report

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## 1 Introduction

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

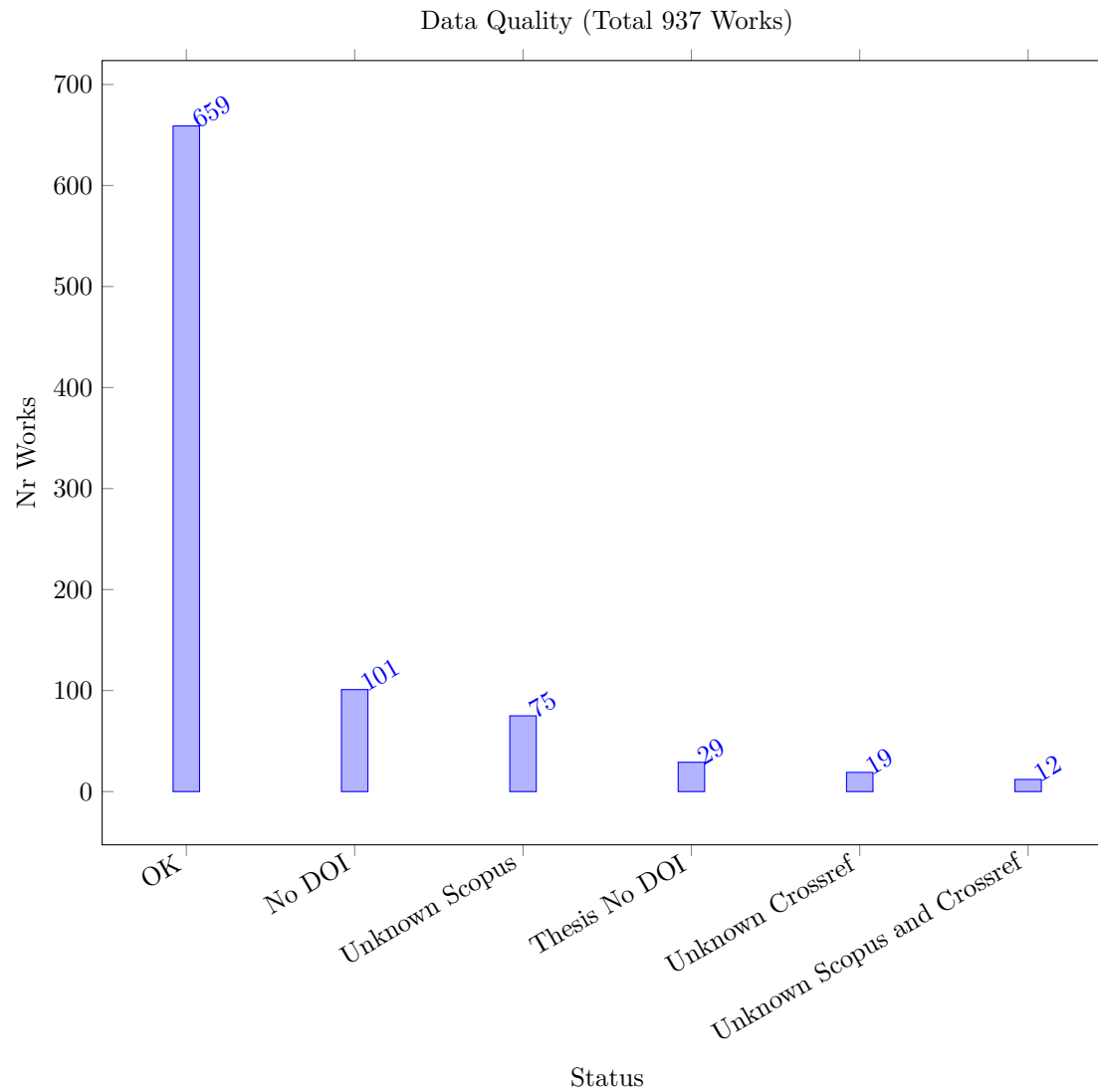


Table 1: Works Unknown to Crossref and Scopus

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
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	0	3	0	3	100.00

Key	DOI	Source Group	Year	Nr Citations	Crossref Citations	Scopus Citations	WoS Citations	Range Citations	Range Percentage
IklassovMR023	10.24963/ijcai.2023/594	IJCAI	2023	0	0	0	null	0	NaN
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
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
GodetLHS20	10.1609/aaai.v34i02.5510	AAAI	2020	1	1	0	null	1	100.00
FallahiAC20	10.1504/ijams.2020.10026882	OtherJournal	2020	0	0	0	null	0	NaN
AbidinK20	10.1016/j.cor.2020.105069	ORJournal	2020	11	14	0	null	14	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
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
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
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
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
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
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
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
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
Limtanyakul07	10.1007/978-3-540-77903-2_65	OtherConf	2007	2	2	0	null	2	100.00
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
OddiPCC05	10.1007/0-387-27744-7_7	OtherConf	2005	3	3	0	null	3	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

Key	DOI	Source Group	Year	Nr Citations	Crossref Citations	Scopus Citations	WoS Citations	Range Citations	Range Percentage
Apt03	10.1017/cbo9780511615320	Background	2003	381	374	0	null	381	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	Informatics	2002	14	14	0	null	14	100.00
Hooker02	10.1287/ijoc.14.4.295.2828	Informatics	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
BaptistePN01	10.1007/978-1-4615-1479-4	Book	2001	296	302	0	null	302	100.00
BosiM2001	10.1002/1097-024x(200101)31:1<17::aid-spe355>3.0.co;2-l	OtherJournal	2001	3	3	0	null	3	100.00
Henz01	10.1287/opre.49.1.163.11193	ORJournal	2001	65	68	0	null	68	100.00
Rgin2001	10.1090/dimacs/057/07	Inbook	2001	28	29	0	null	29	100.00
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
Simonis95a	10.1007/3-540-60794-3_11	OtherConf	1995	1	1	0	null	1	100.00
BaptisteLV92	10.1109/robot.1992.220195	OtherConf	1992	13	11	0	null	13	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
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
SakkoutW00	10.1023/a:1009856210543	Constraints	2000	73	0	105	null	105	100.00
Hooker02	10.1287/ijoc.14.4.295.2828	Informatics	2002	94	93	0	null	94	100.00

Key	DOI	Source Group	Year	Nr Citations	Crossref Citations	Scopus Citations	WoS Citations	Range Citations	Range Percentage
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
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
ArtiguesDN08	10.1002/9780470611227	Book	2008	63	0	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
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
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	Informatics	2001	279	284	321	null	42	13.08
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
BlazewiczEP19	10.1007/978-3-319-99849-7	Incoll	2019	38	38	0	null	38	100.00
HarjunkoskiMBC14	10.1016/j.compchemeng.2013.12.001	OtherJournal	2014	381	393	418	null	37	8.85
SadehF96	10.1016/0004-3702(95)00098-4	AIJournal	1996	95	97	131	null	36	27.48
BeckW07	10.1613/jair.2080	AIJournal	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	Informatics	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
TranB12	10.3233/978-1-61499-098-7-774	ECAI	2012	0	0	30	null	30	100.00
Thorsteinsson01	10.1007/3-540-45578-7_2	CP	2001	67	68	97	null	30	30.93
Rgin2001	10.1090/dimacs/057/07	Inbook	2001	28	29	0	null	29	100.00
AggounB93	10.1016/0895-7177(93)90068-a	OtherJournal	1993	187	191	214	null	27	12.62
PembertonG98	10.1090/dimacs/057/06	OtherConf	1998	26	0	0	null	26	100.00
Beck10	10.1007/978-3-642-15396-9_10	CP	2010	19	21	45	null	26	57.78
NuijtenA96	10.1016/0377-2217(95)00354-1	EJOR	1996	65	65	90	null	25	27.78
VilimLS15	10.1007/978-3-319-18008-3_30	CPAIOR	2015	31	31	55	null	24	43.64
Rodriguez07	10.1016/j.trb.2006.02.006	OtherJournal	2007	117	121	141	null	24	17.02
Hooker07	10.1287/opre.1060.0371	ORJournal	2007	181	197	205	null	24	11.71
MengGRZSC22	10.1016/j.swevo.2022.101058	OtherJournal	2022	38	56	62	null	24	38.71
Davis87	10.1016/0004-3702(87)90091-9	AIJournal	1987	308	312	332	null	24	7.23

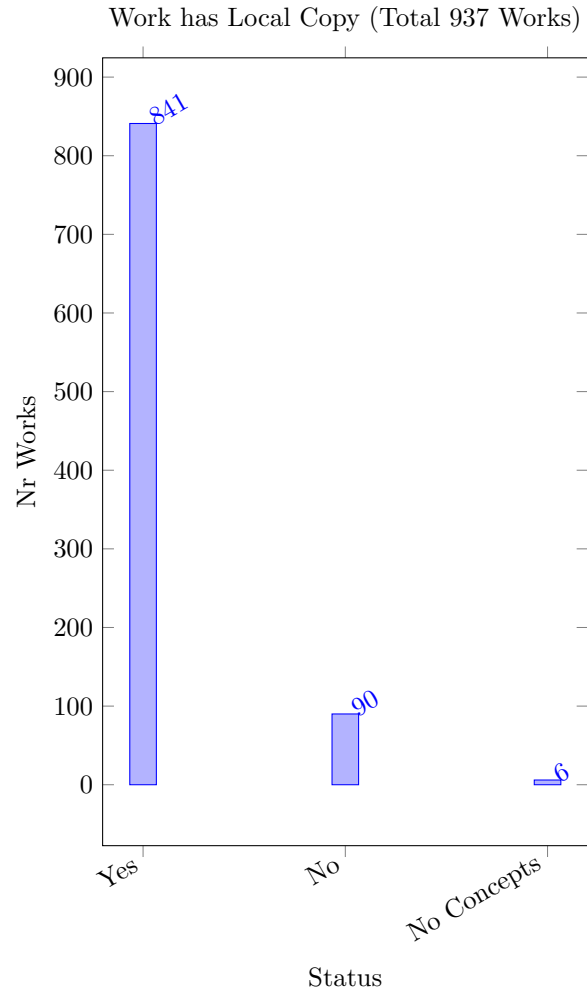
We only have Web of Science data in a few bibtex entries, we here try to evaluate their citation numbers on those bib entries which are from WoS.

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 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.



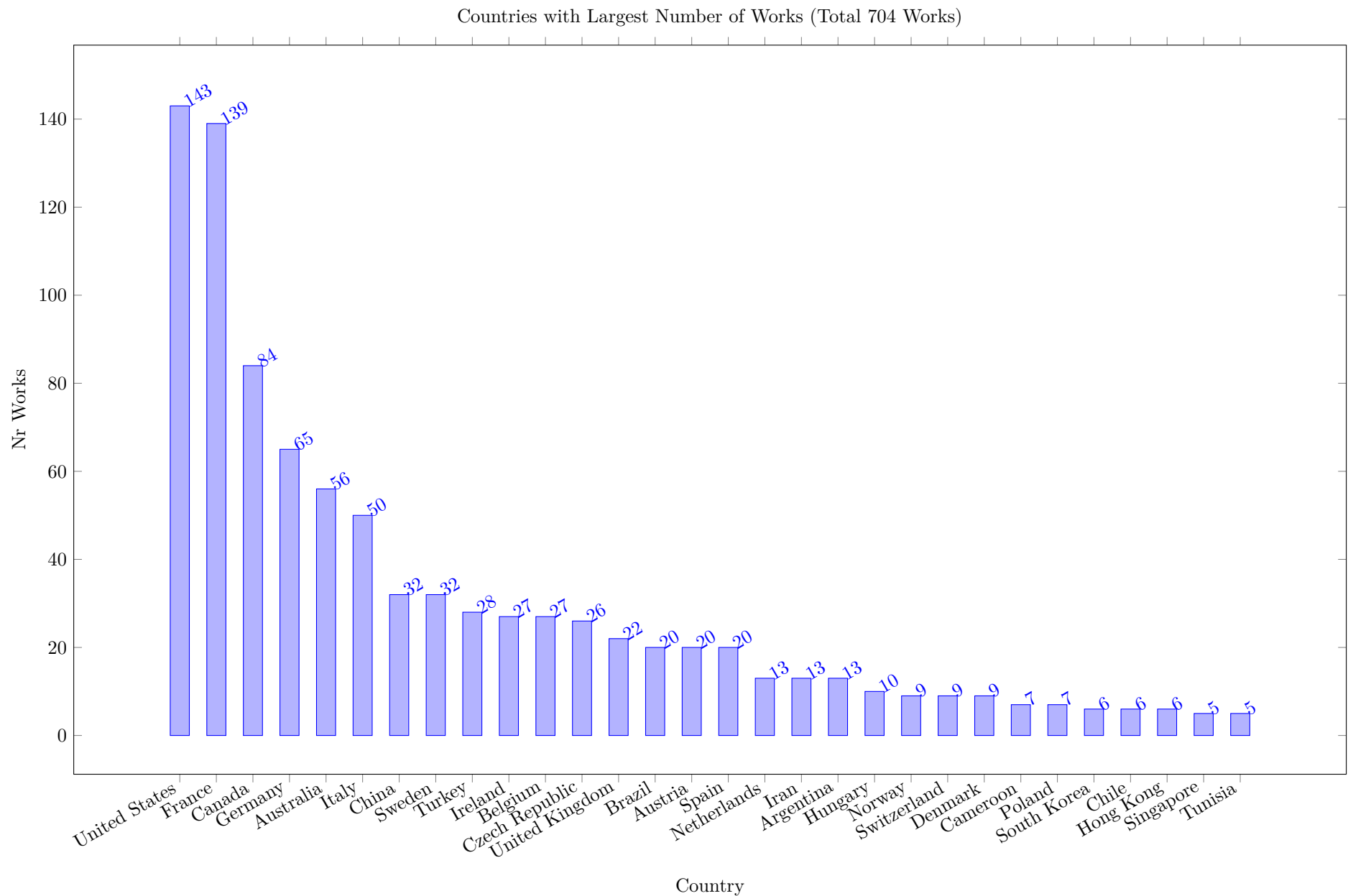
Table 6: Orphan Files

Key	File
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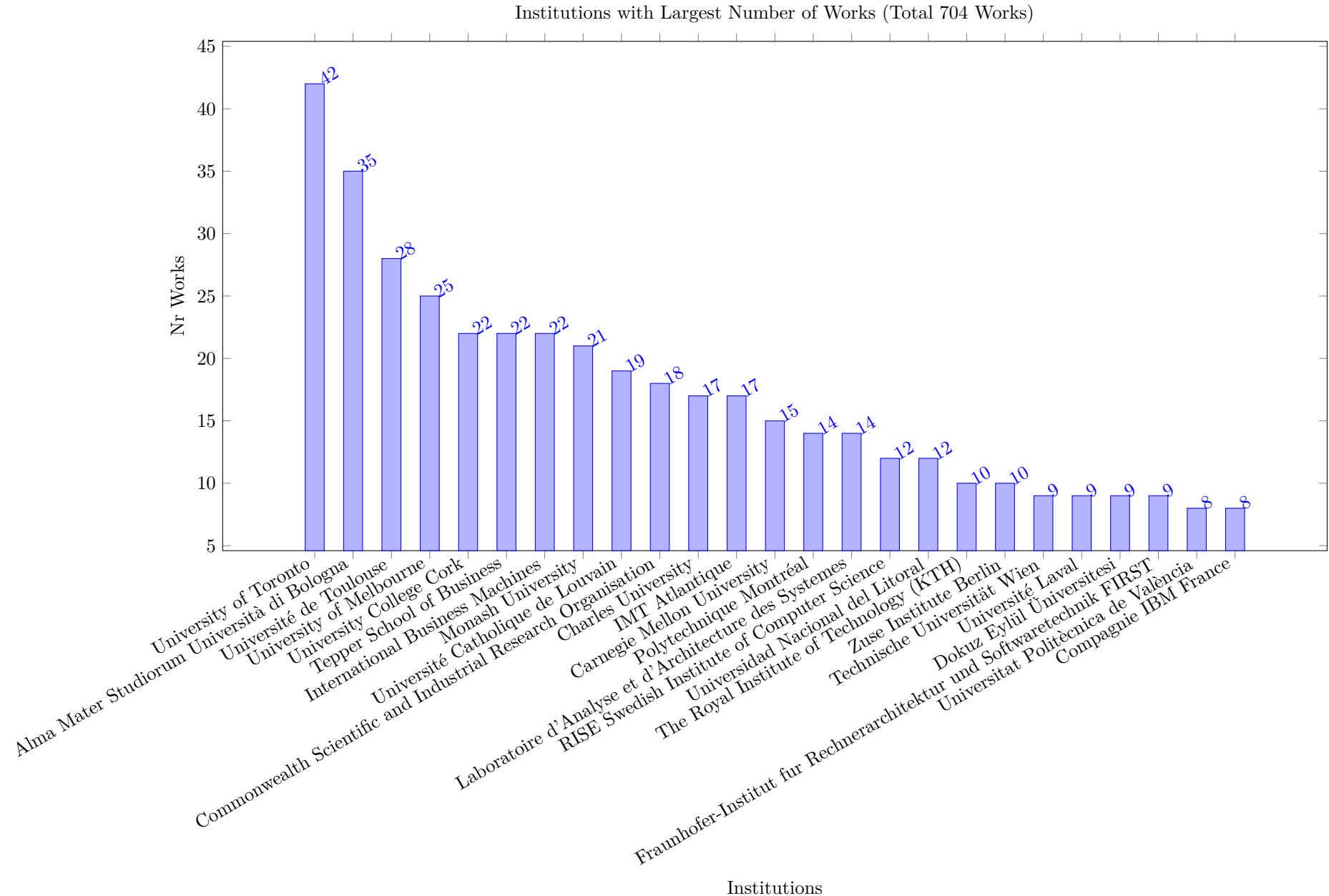
### 3 Works by Location

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.

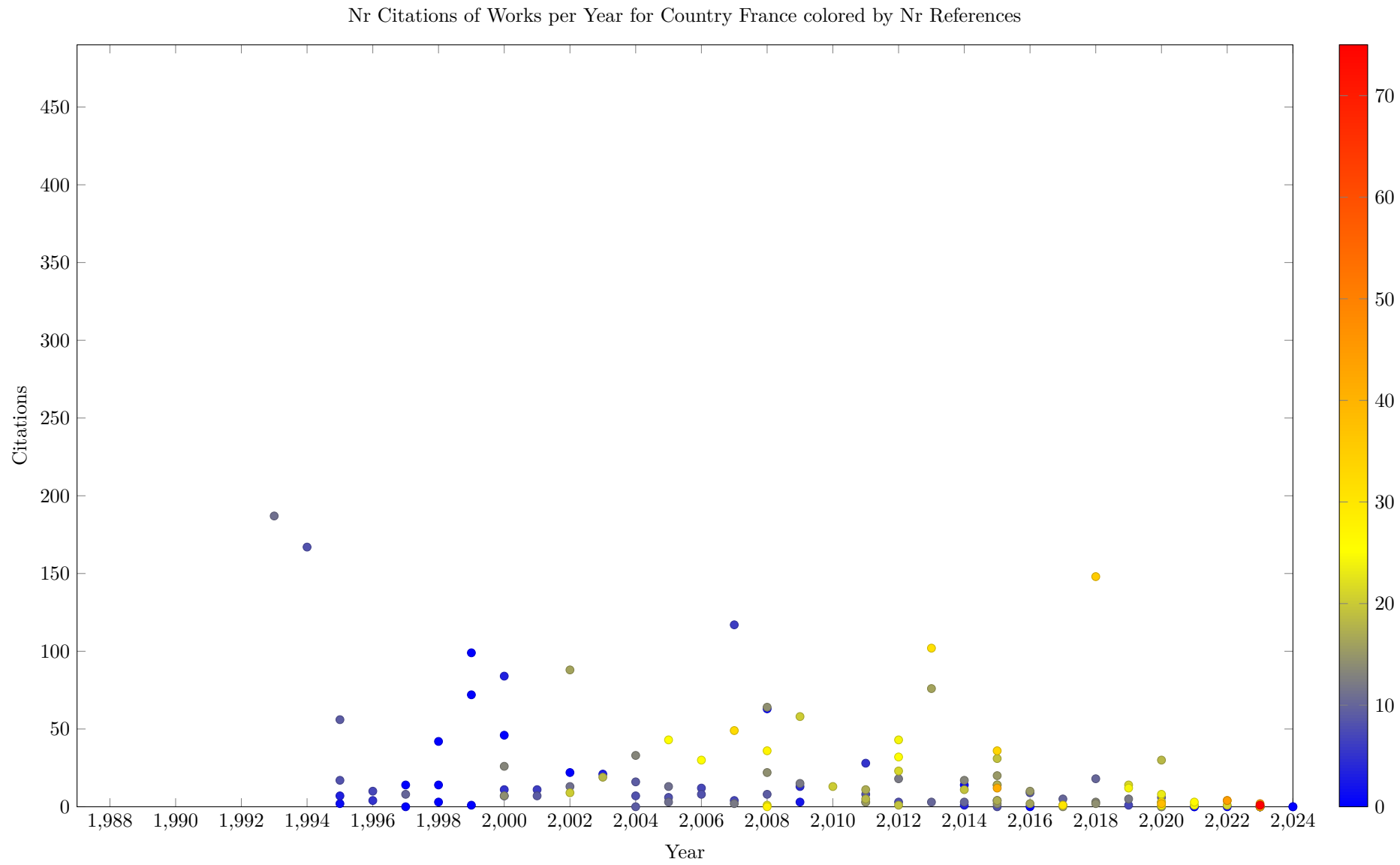


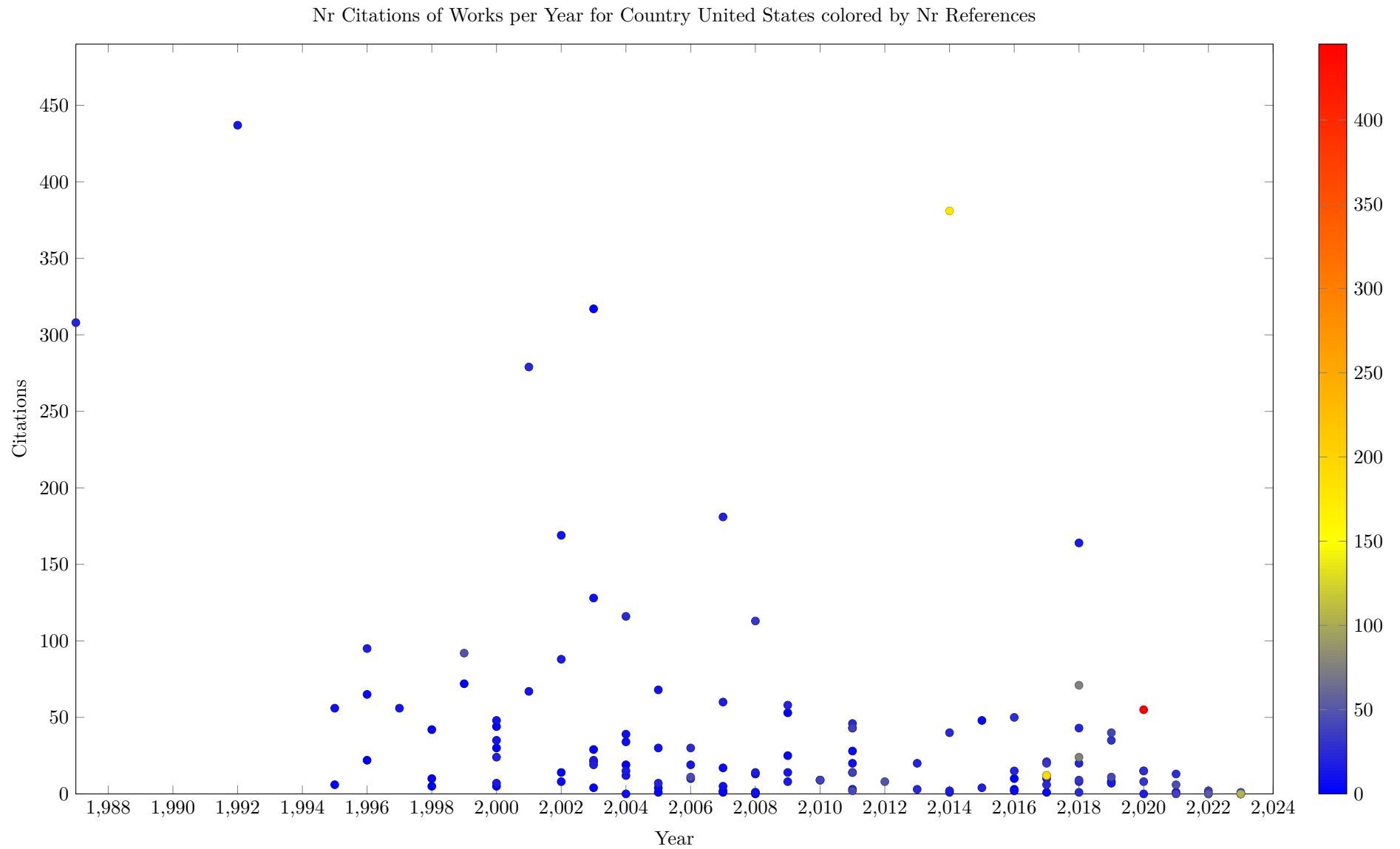
The next plot shows the number of papers associated to institutions, as stated in the Scopus affiliation. A work is counted, if at least one of the affiliations is from a given institution. Due to the format of the Scopus data, we cannot fractionally assign a paper based on the author affiliations, each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



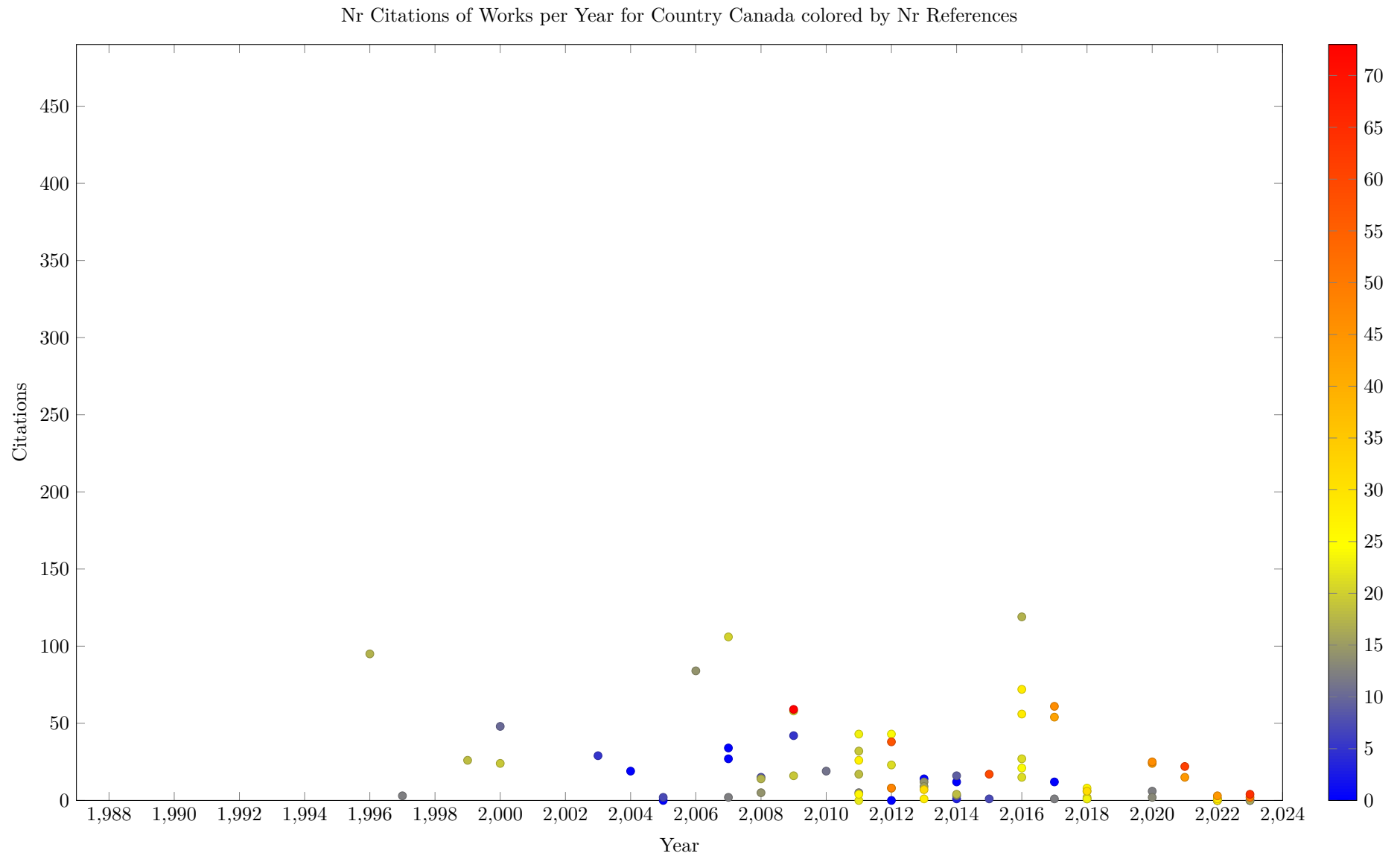
The following plots show for the top 30 countries when the works included were published, and how many citations (OpenCitation count) each paper had. The scatter plots are colored by the number of references (OpenCitation count), this help to identify surveys more easily. The plot gives an indication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

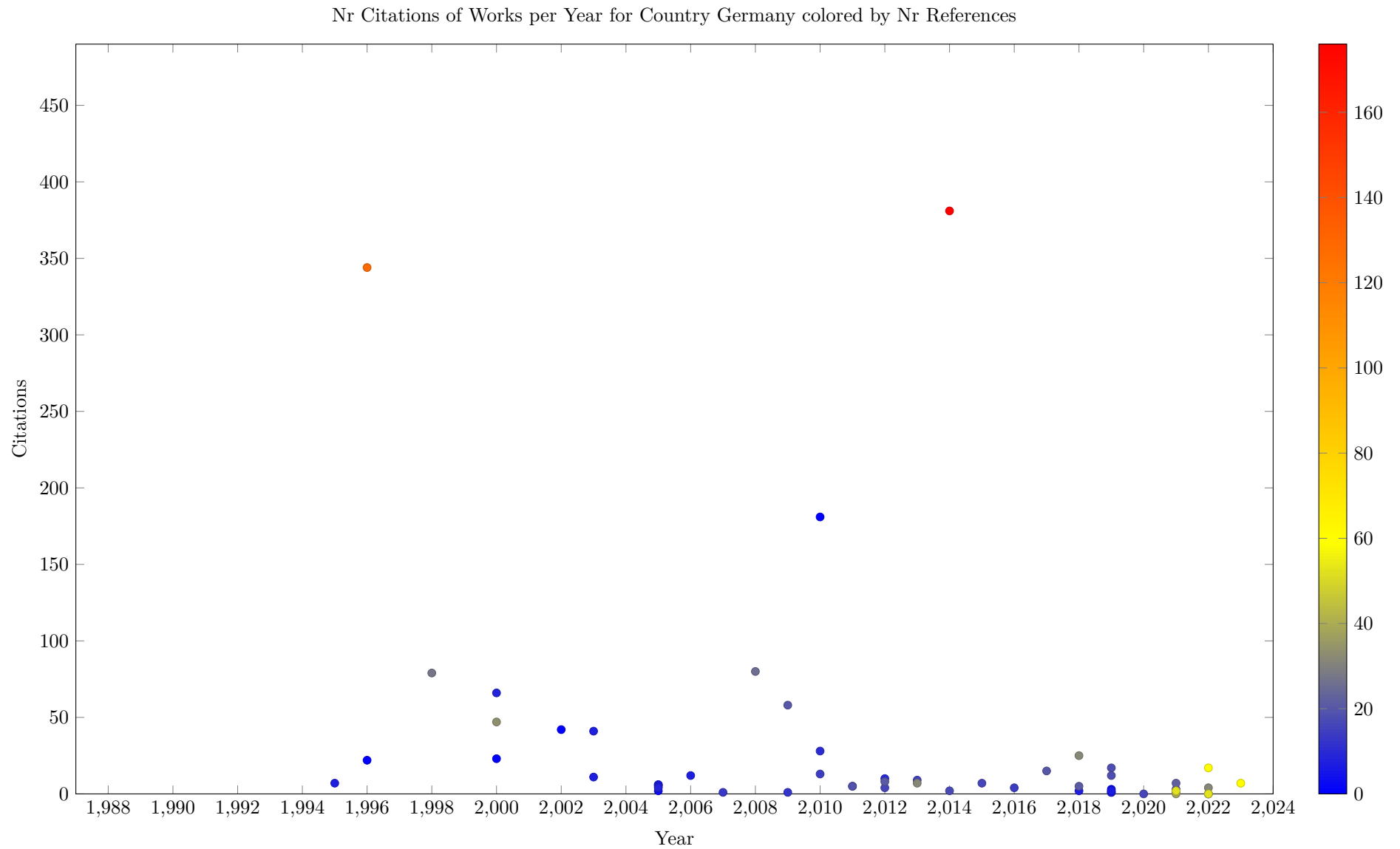
It would be nice to have tooltips on the plots, so identify specific works in the plots. This is currently not supported by the framework library used.

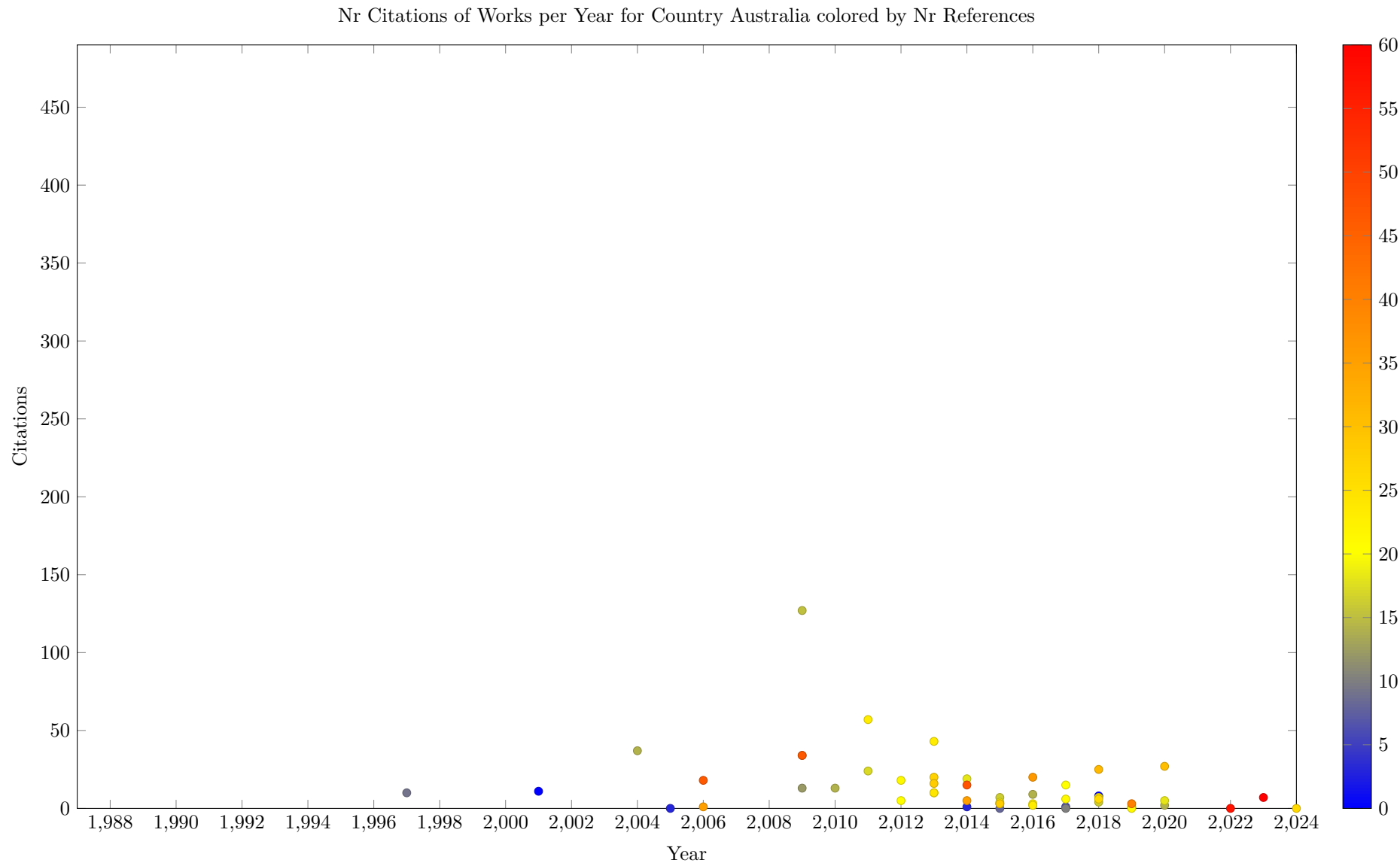


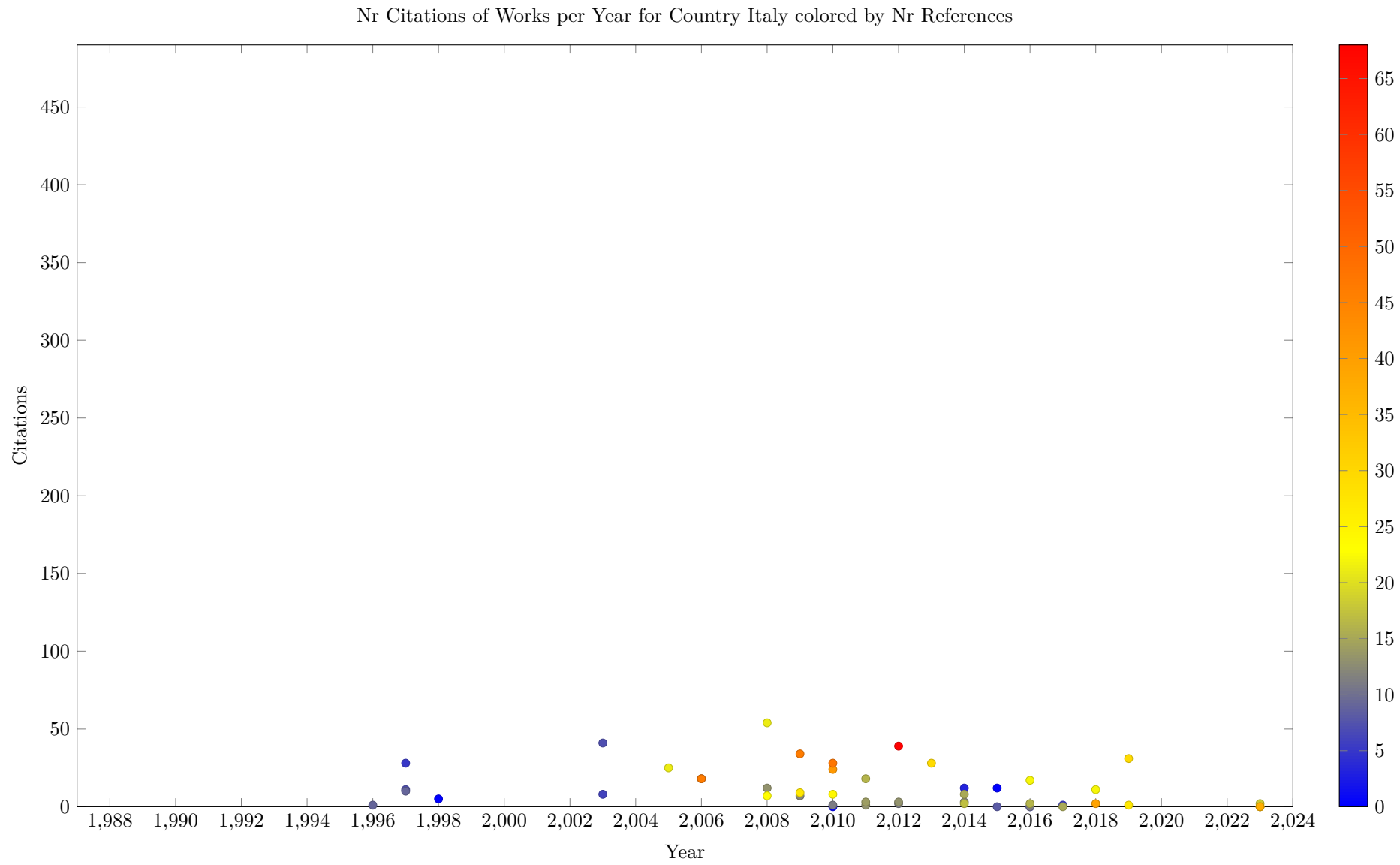


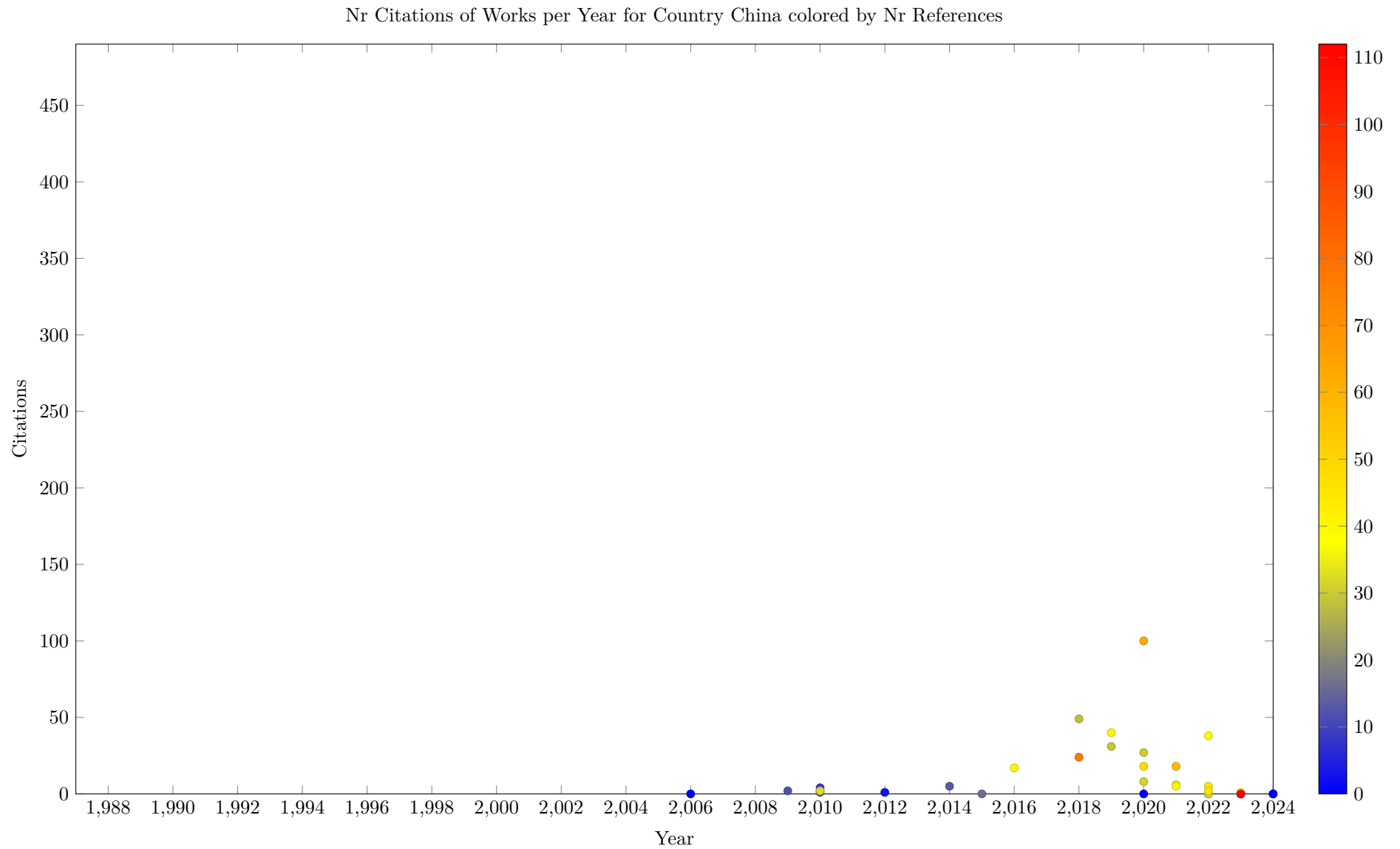


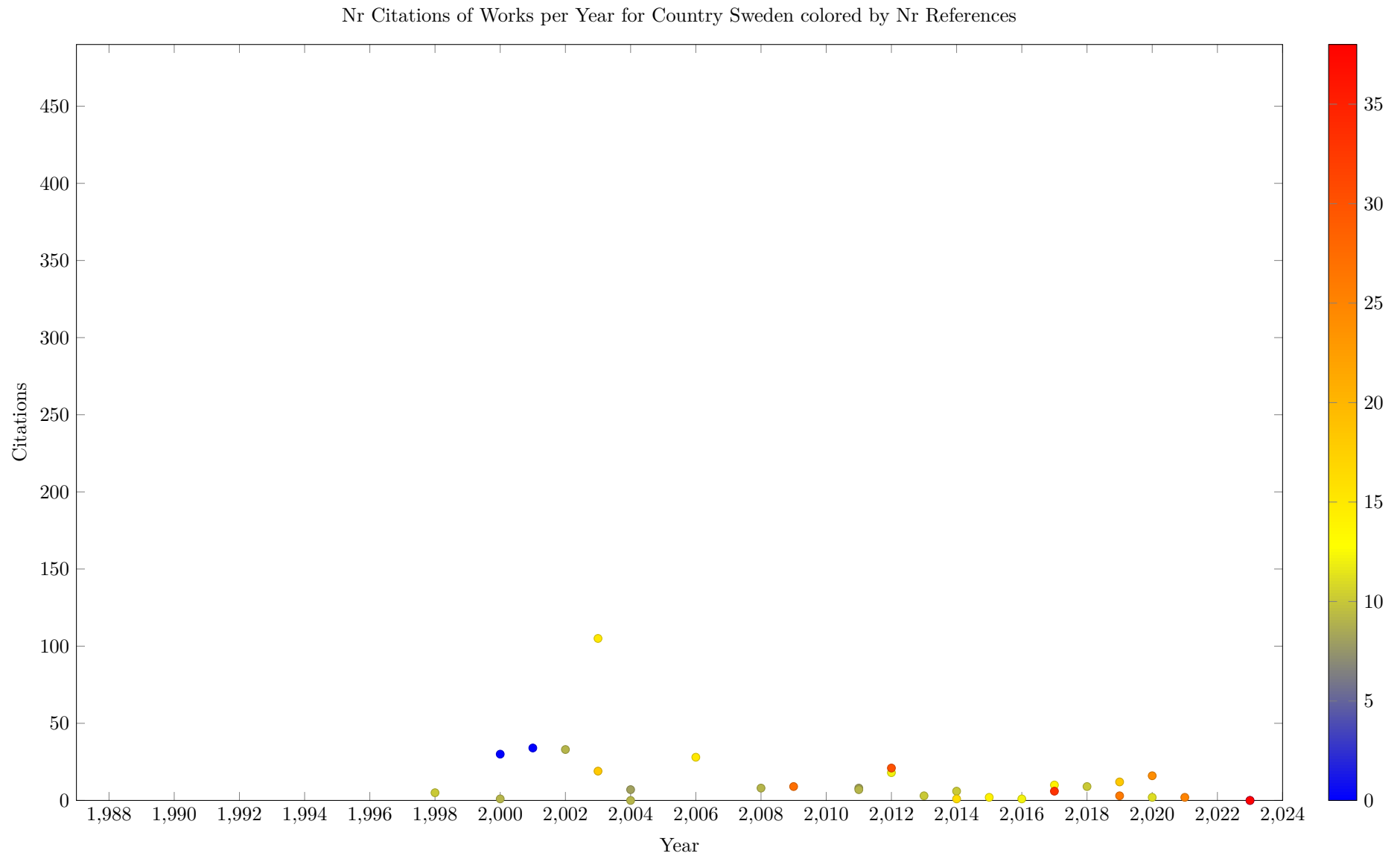


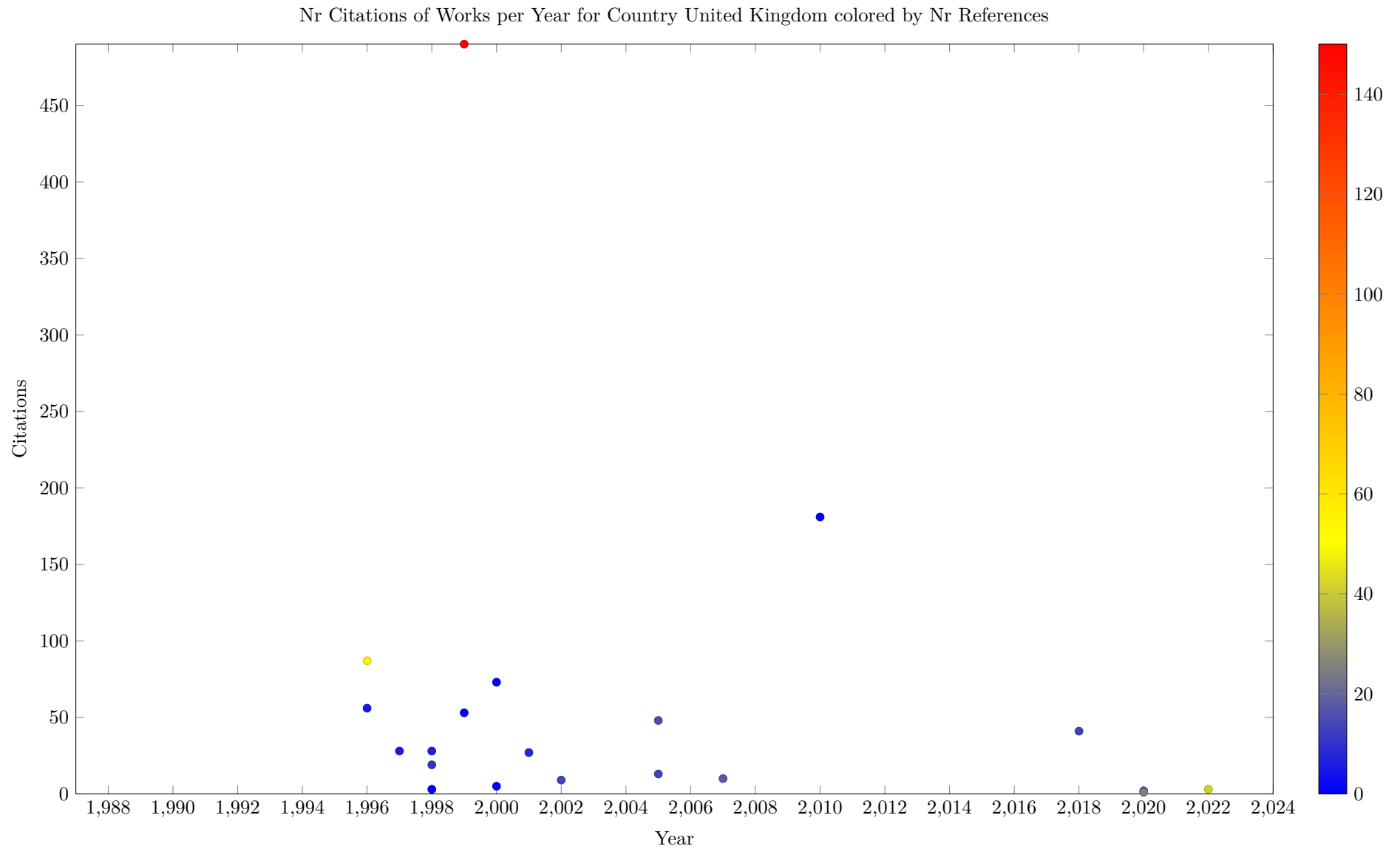


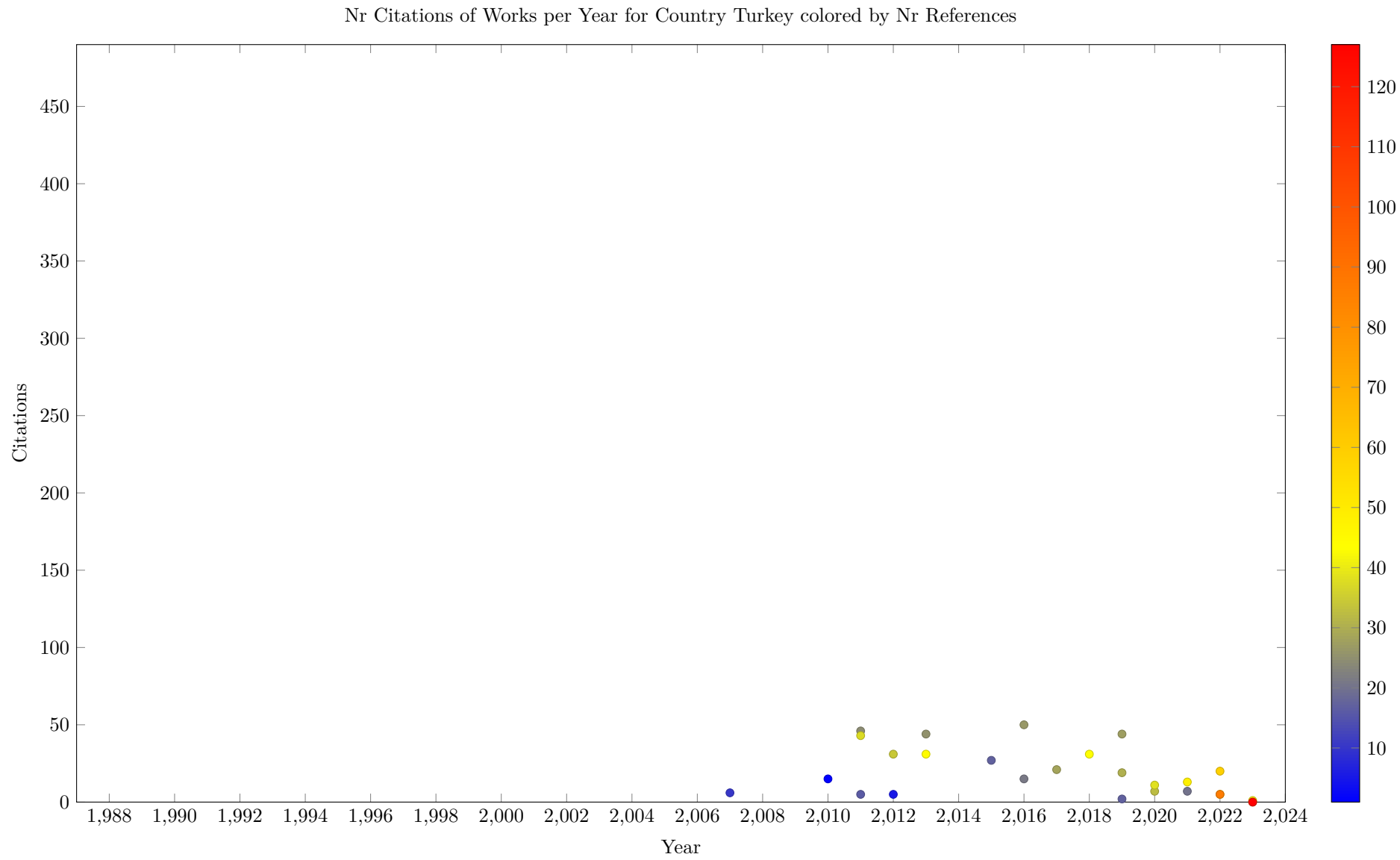




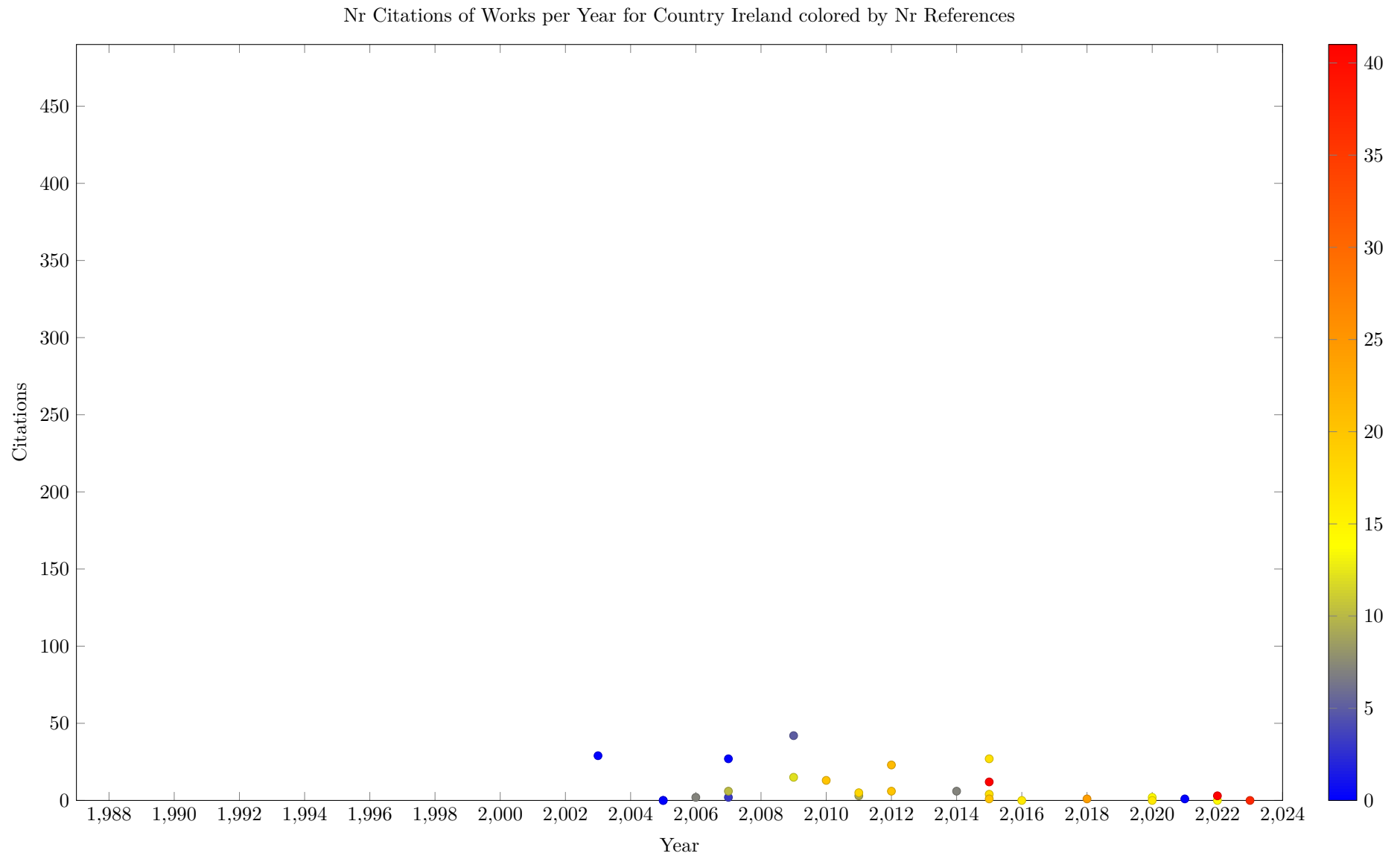


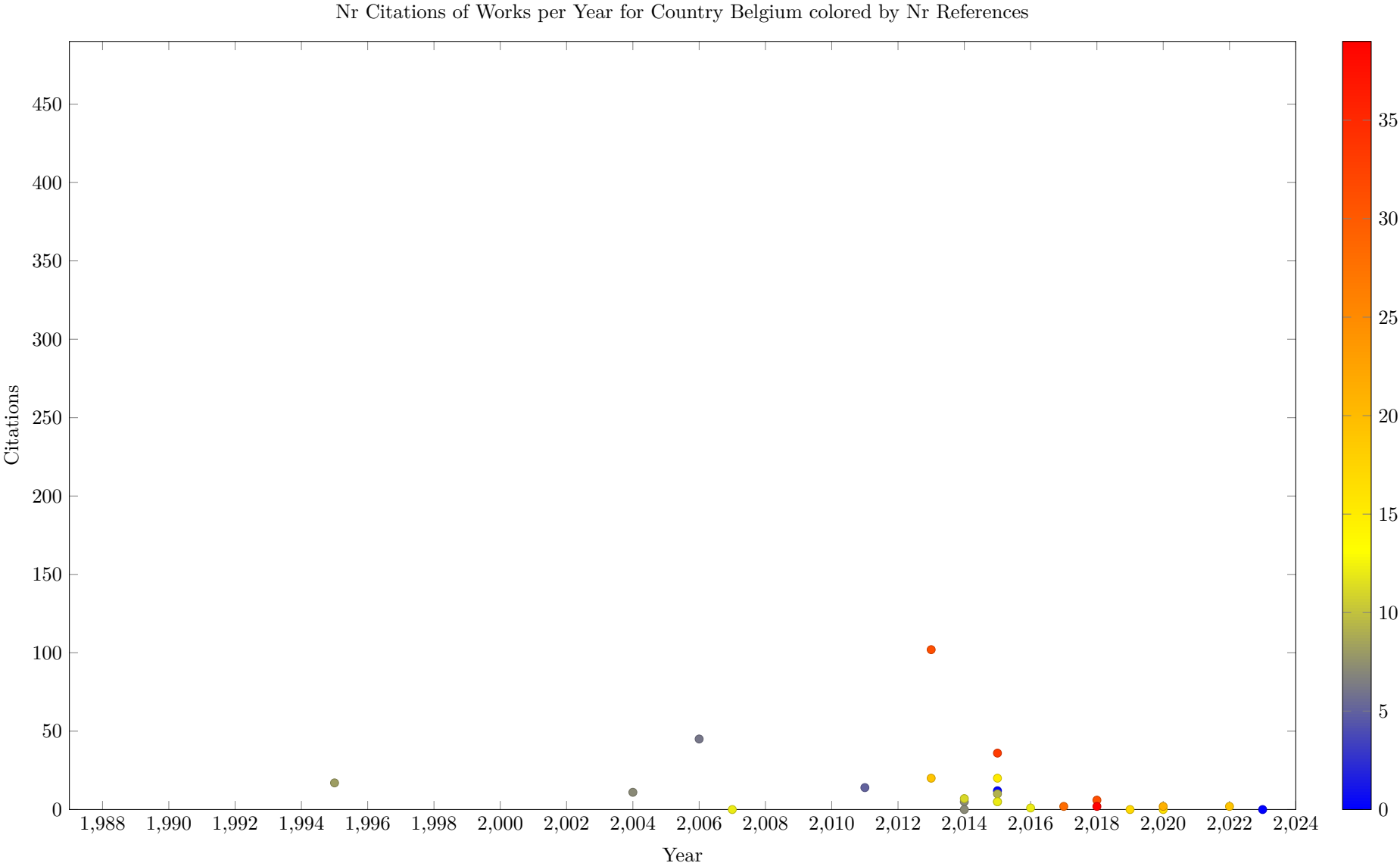


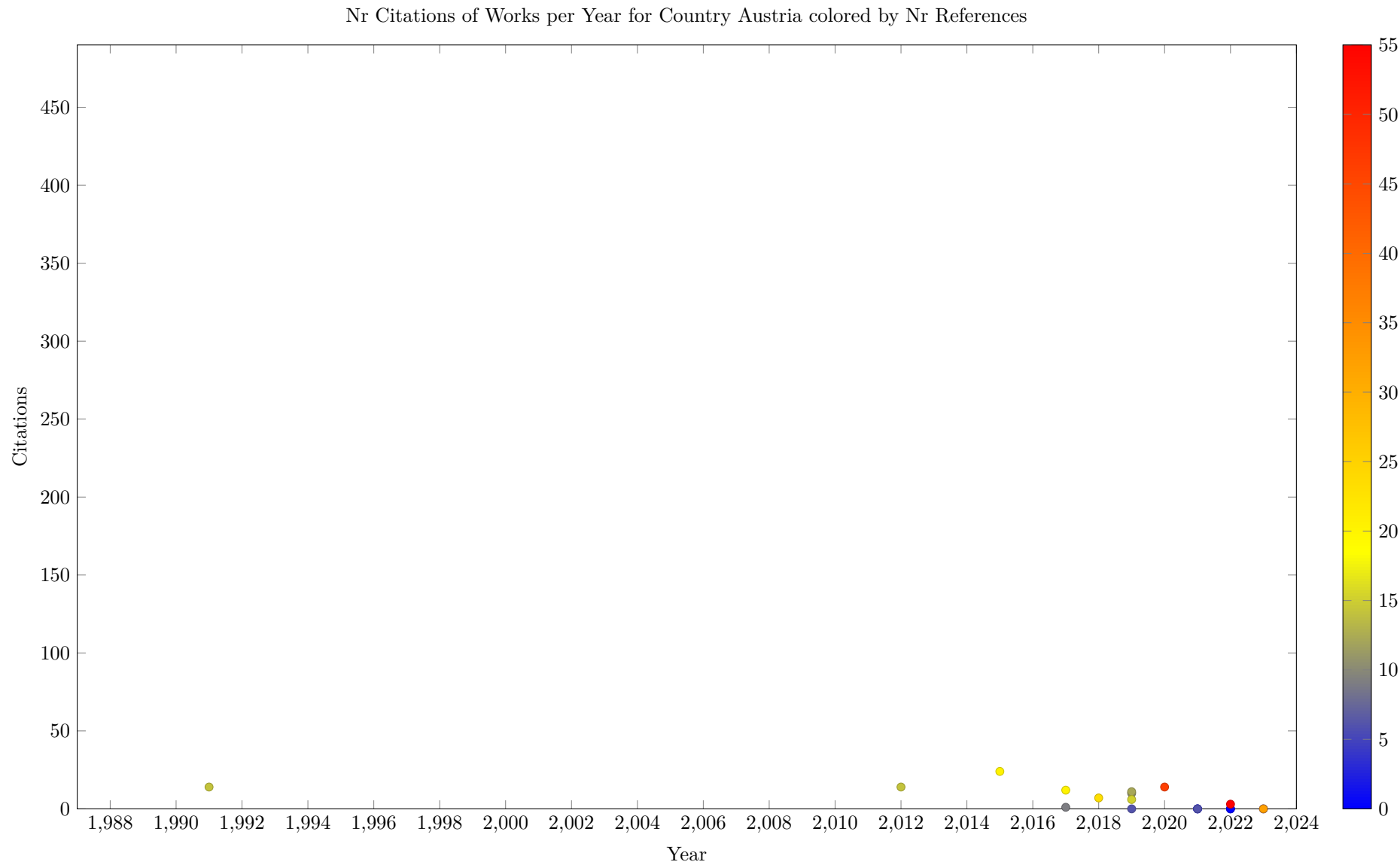


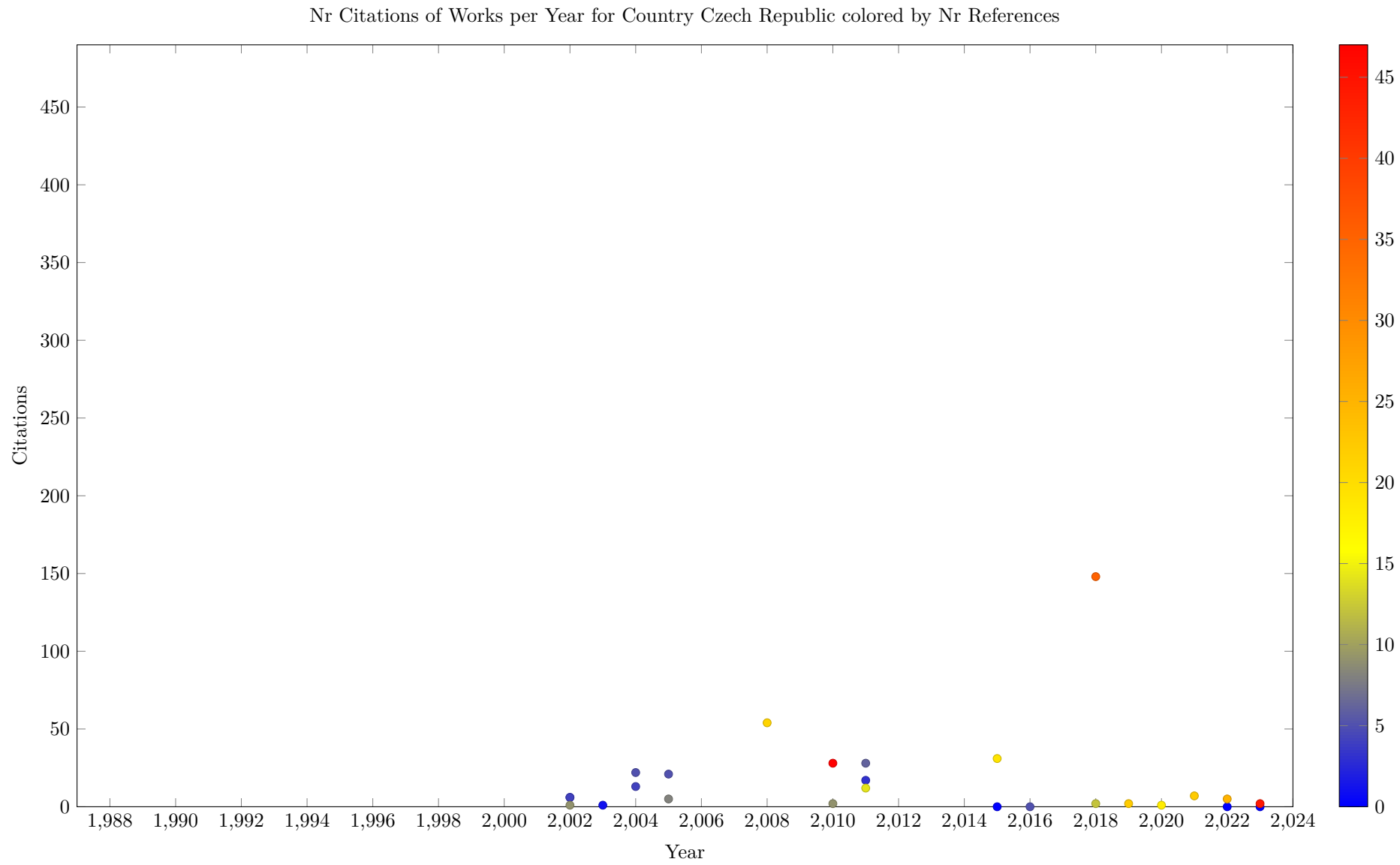


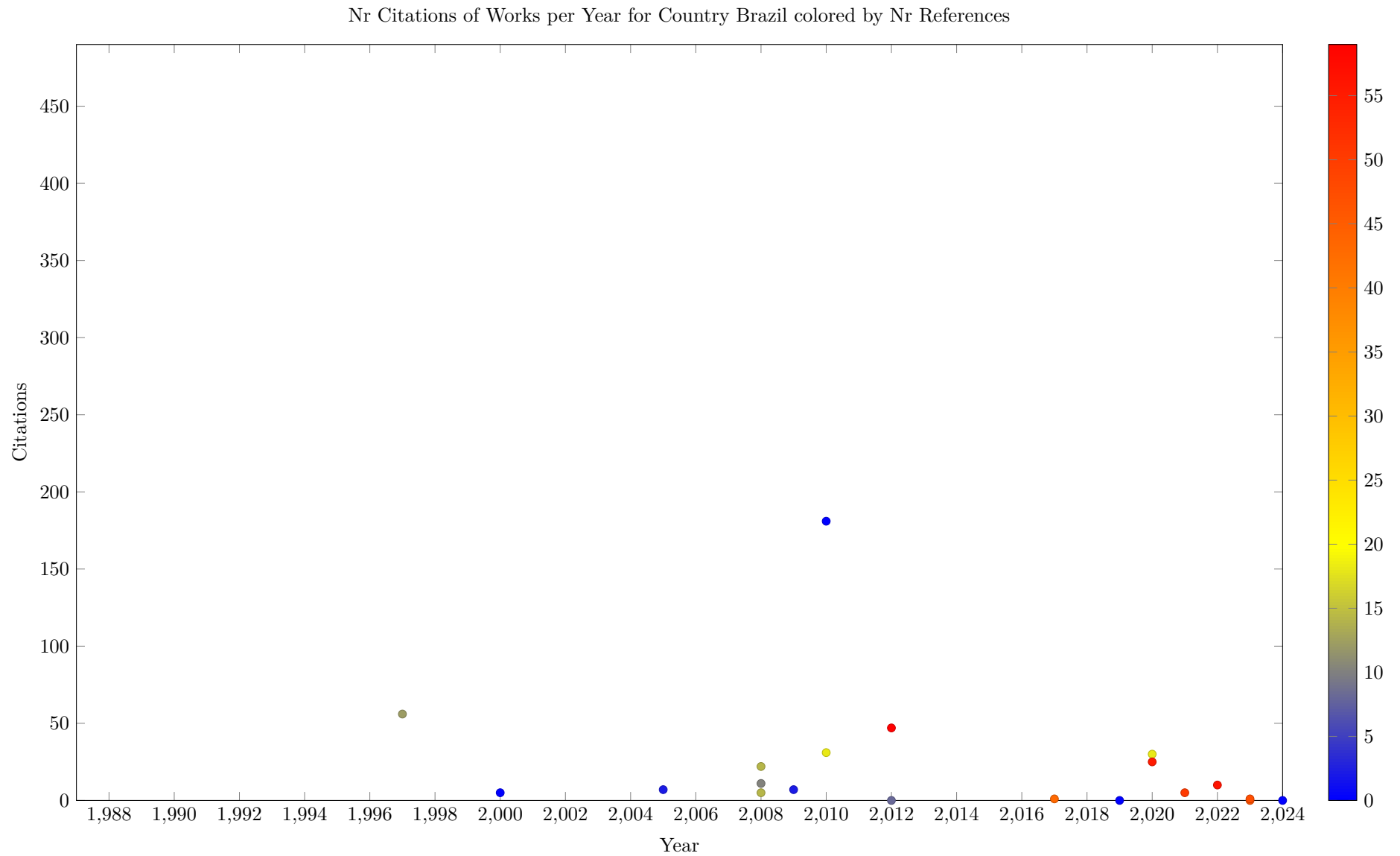


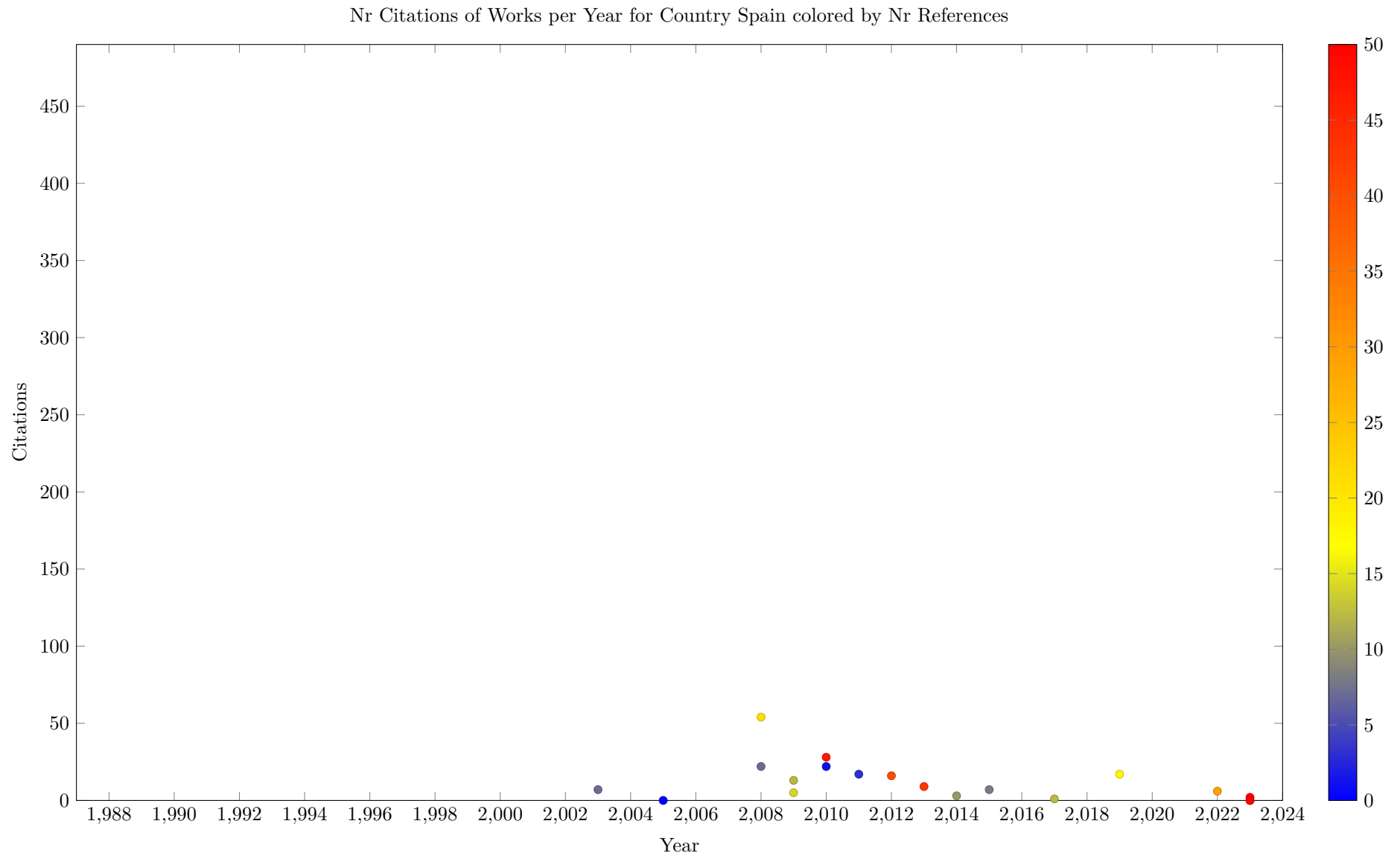


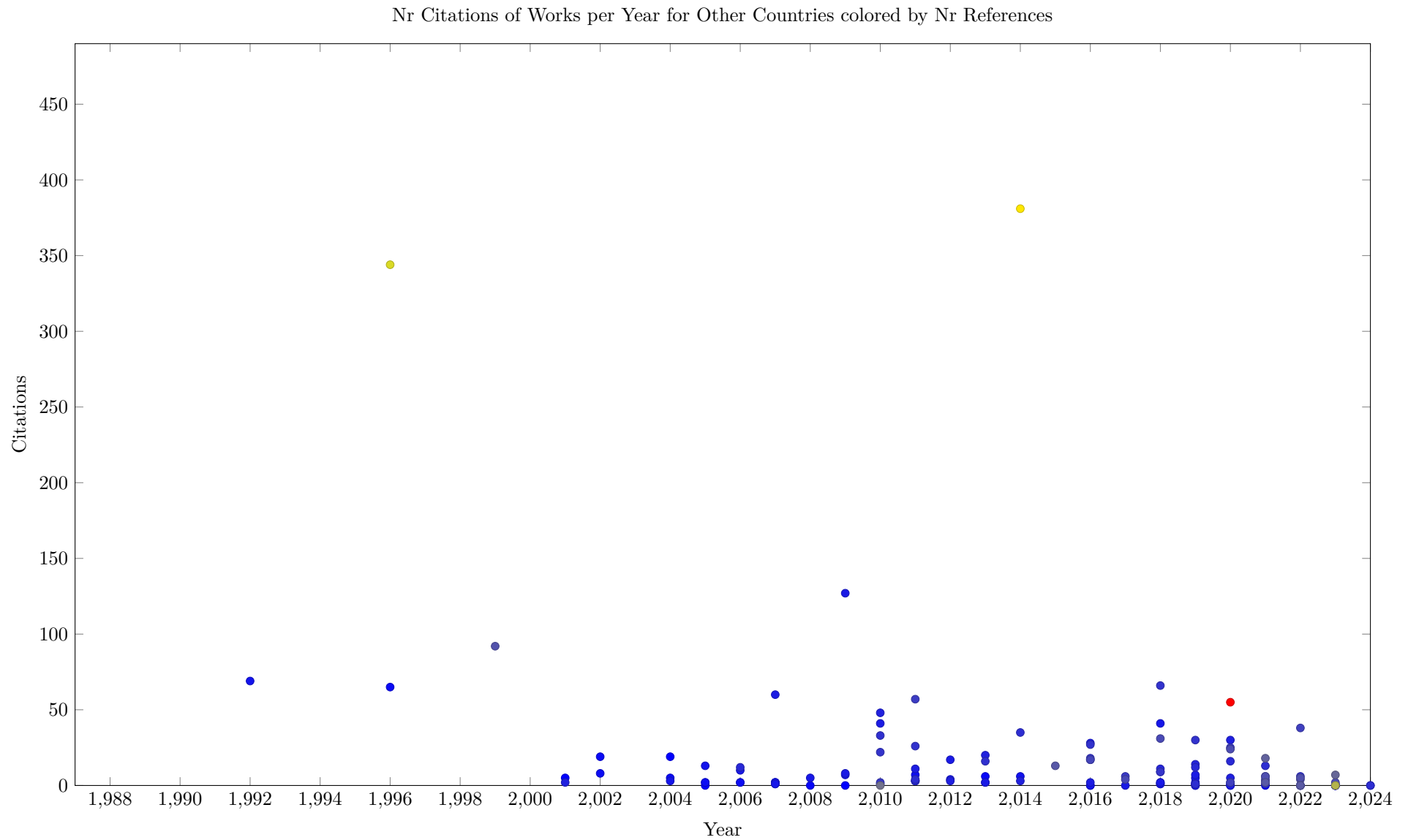








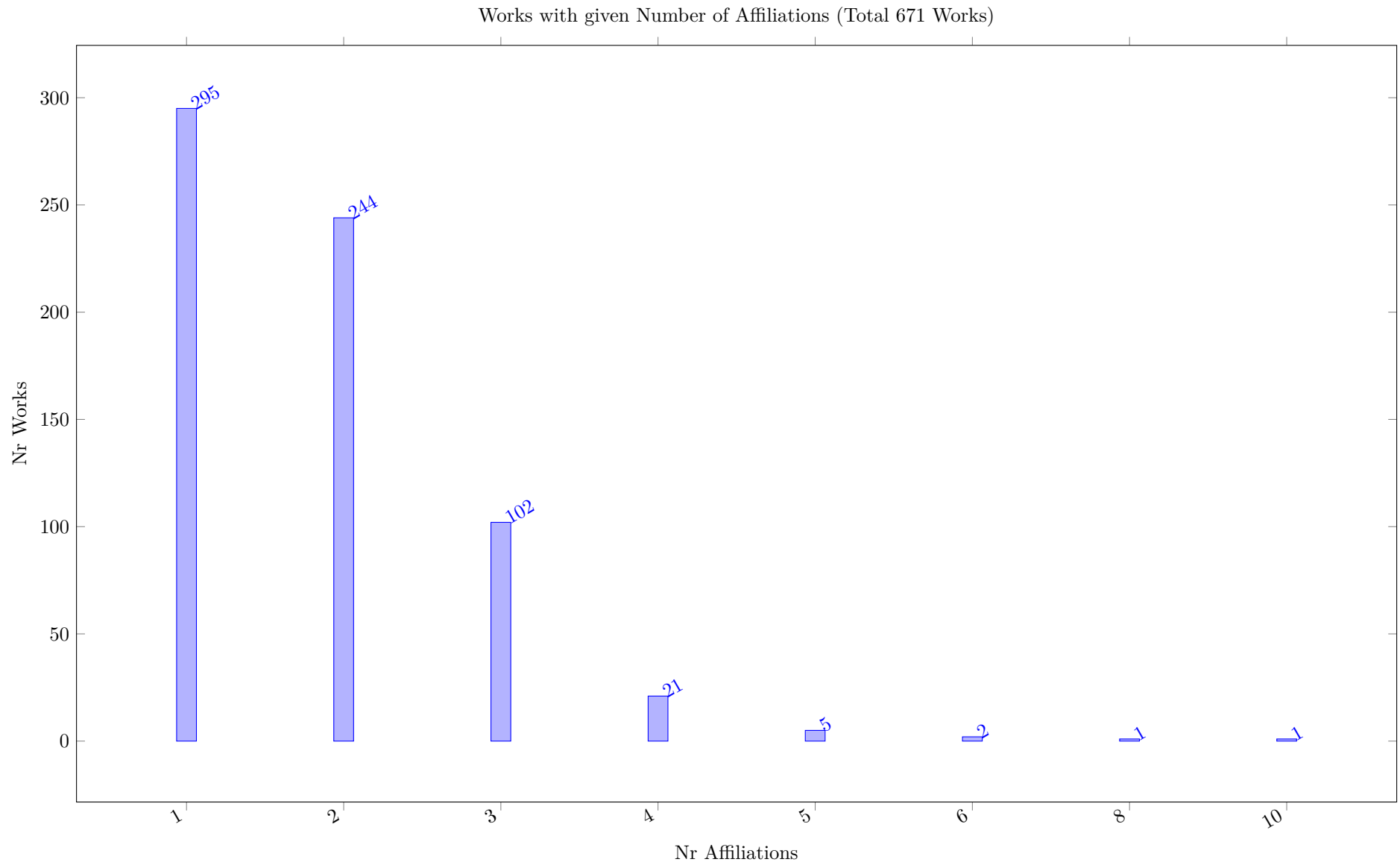




## 4 Collaborations

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.





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

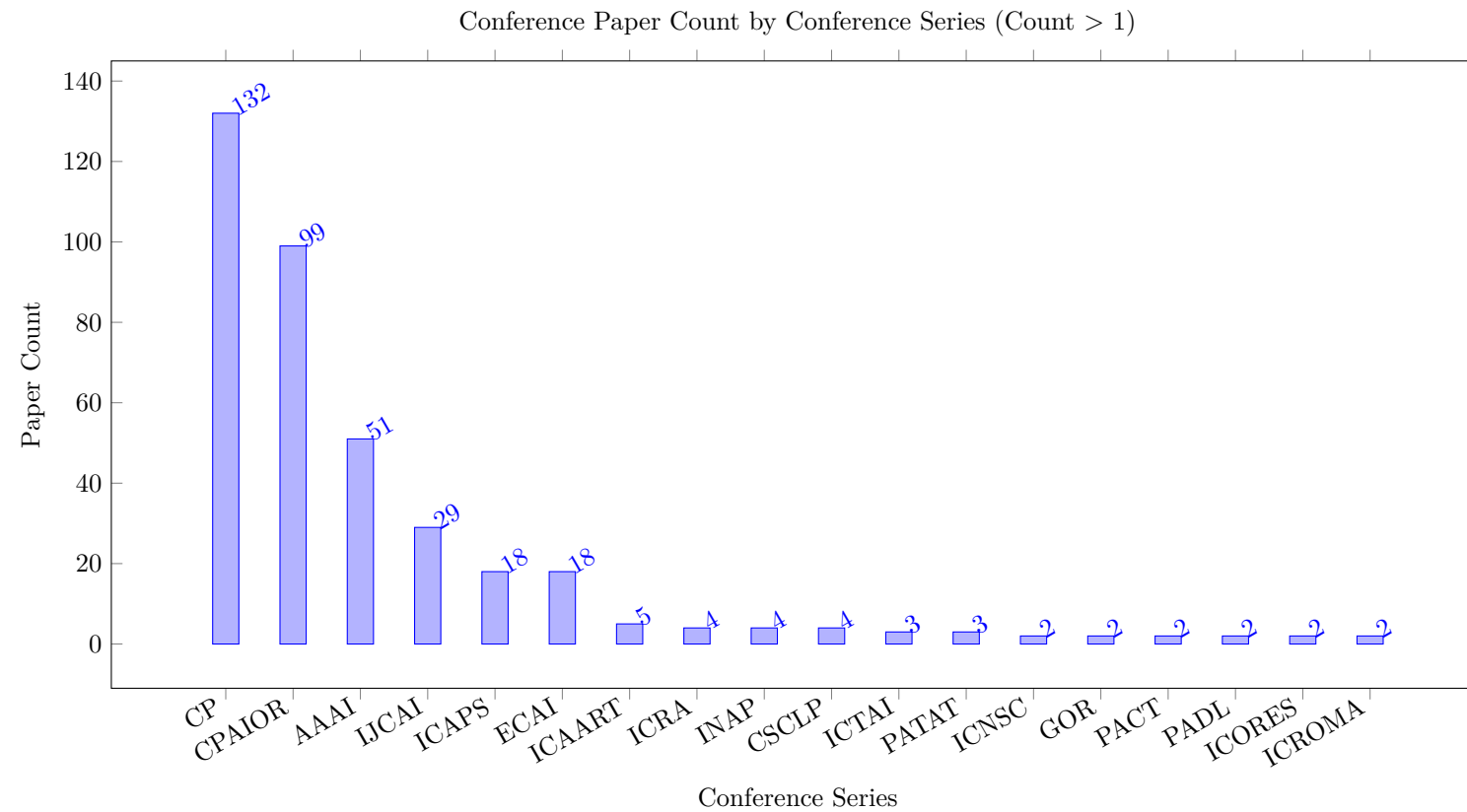
Table 7: Collaboration Data (Top 45 Inst by Decreasing Collab Fraction)

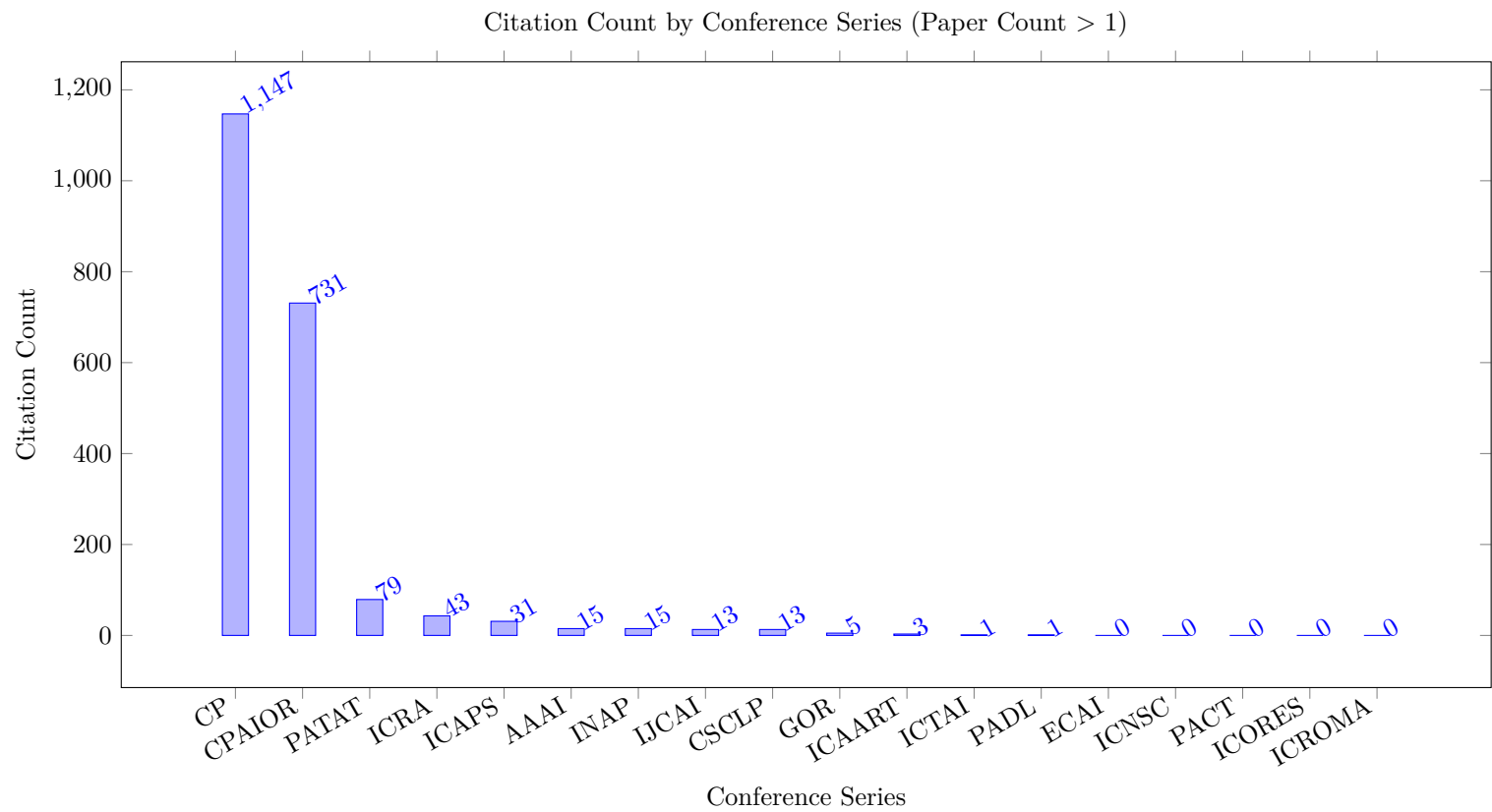
Inst	Nr Works	Collab Count	Domestic Collab	International Collab	Collab Fraction	Domestic Fraction	International Fraction	Collab Percentage	International Percentage
University of Toronto, Toronto, Canada	42	40	18	22	26.00	8.50	17.50	61.90	41.67
Université de Toulouse, Toulouse, France	28	37	19	18	21.00	14.83	6.17	75.00	22.02
University of Melbourne, Melbourne, Australia	25	32	23	9	20.00	15.00	5.00	80.00	20.00
Monash University, Clayton, Australia	21	28	19	9	19.00	13.50	5.50	90.48	26.19
Commonwealth Scientific and Industrial Research Organisation, Canberra, Australia	18	30	24	6	18.00	15.00	3.00	100.00	16.67
University College Cork, Cork, Ireland	22	31	6	25	17.00	1.76	15.24	77.27	69.26
Alma Mater Studiorum Università di Bologna, Bologna, Italy	35	22	6	16	15.00	3.83	11.17	42.86	31.90
Laboratoire d'Analyse et d'Architecture des Systemes, Toulouse, France	14	19	14	5	13.00	10.00	3.00	92.86	21.43
IMT Atlantique, Nantes, France	17	15	5	10	13.00	4.00	9.00	76.47	52.94
International Business Machines, Armonk, United States	22	16	0	16	12.00	0.00	12.00	54.55	54.55
RISE, Swedish Institute of Computer Science, Kista, Sweden	12	14	3	11	10.00	2.00	8.00	83.33	66.67
The Royal Institute of Technology (KTH), Stockholm, Sweden	10	20	15	5	10.00	7.67	2.33	100.00	23.33
Université Catholique de Louvain, Louvain-la-Neuve, Belgium	19	12	2	10	9.00	1.33	7.67	47.37	40.35
Tepper School of Business, Pittsburgh, United States	22	18	6	12	9.00	2.33	6.67	40.91	30.30
Polytechnique Montréal, Montreal, Canada	14	10	6	4	8.00	5.50	2.50	57.14	17.86
Technische Universität Wien, Vienna, Austria	9	8	6	2	7.00	6.00	1.00	77.78	11.11
Dokuz Eylül Üniversitesi, Izmir, Turkey	9	8	6	2	7.00	5.00	2.00	77.78	22.22
Rotman School of Management, Toronto, Canada	7	16	13	3	7.00	5.50	1.50	100.00	21.43
Charles University, Prague, Czech Republic	17	10	4	6	7.00	3.50	3.50	41.18	20.59
Zuse Institute Berlin, Berlin, Germany	10	9	6	3	7.00	4.50	2.50	70.00	25.00
Universidade de São Paulo, Sao Paulo, Brazil	7	8	4	4	6.00	3.50	2.50	85.71	35.71
Universidad Nacional del Litoral, Santa Fe, Argentina	12	14	4	10	6.00	4.00	2.00	50.00	16.67
Université d'Avignon et des Pays du Vaucluse, Avignon, France	7	7	5	2	6.00	4.00	2.00	85.71	28.57
Université de Maroua, Maroua, Cameroon	6	10	6	4	6.00	3.67	2.33	100.00	38.89
Université Grenoble Alpes, Saint Martin d'Heres, France	5	8	7	1	5.00	4.67	0.33	100.00	6.67
University of Connecticut, Storrs, United States	5	8	5	3	5.00	3.83	1.17	100.00	23.33
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
University of Windsor, Windsor, Canada	5	10	9	1	5.00	4.50	0.50	100.00	10.00
ABB Corporate Research, Vasteras, Vasteras, Sweden	5	11	9	2	5.00	4.00	1.00	100.00	20.00
Compagnie IBM France, Bois-Colombes, France	8	7	3	4	5.00	2.00	3.00	62.50	37.50
Technische Universität Berlin, Berlin, Germany	6	13	5	8	5.00	3.50	1.50	83.33	25.00
Magyar Tudományos Akademia, Budapest, Hungary	8	6	0	6	5.00	0.00	5.00	62.50	62.50
Bouygues, Paris, France	7	5	3	2	5.00	3.00	2.00	71.43	28.57
Université Laval, Quebec, Canada	9	9	2	7	4.00	1.00	3.00	44.44	33.33
UNSW Sydney, Sydney, Australia	5	9	3	6	4.00	2.00	2.00	80.00	40.00
Brown University, Providence, United States	6	10	4	6	4.00	2.53	1.47	66.67	24.44
Universidade Federal do Ceará, Fortaleza, Brazil	4	5	4	1	4.00	3.50	0.50	100.00	12.50
Universidad Andrés Bello, Santiago, Chile	4	11	6	5	4.00	2.40	1.60	100.00	40.00
Alpen-Adria-Universität Klagenfurt, Klagenfurt, Austria	6	5	5	0	4.00	4.00	0.00	66.67	0.00
Universitat Politècnica de València, Valencia, Spain	8	7	0	7	4.00	0.00	4.00	50.00	50.00
CNRS Centre National de la Recherche Scientifique, Paris, France	6	5	2	3	4.00	2.00	2.00	66.67	33.33
Uppsala Universitet, Uppsala, Sweden	4	9	4	5	4.00	1.00	3.00	100.00	75.00
Aarhus Universitet, Aarhus, Denmark	4	4	0	4	4.00	0.00	4.00	100.00	100.00
Huazhong University of Science and Technology, Wuhan, China	4	10	8	2	4.00	3.17	0.83	100.00	20.83

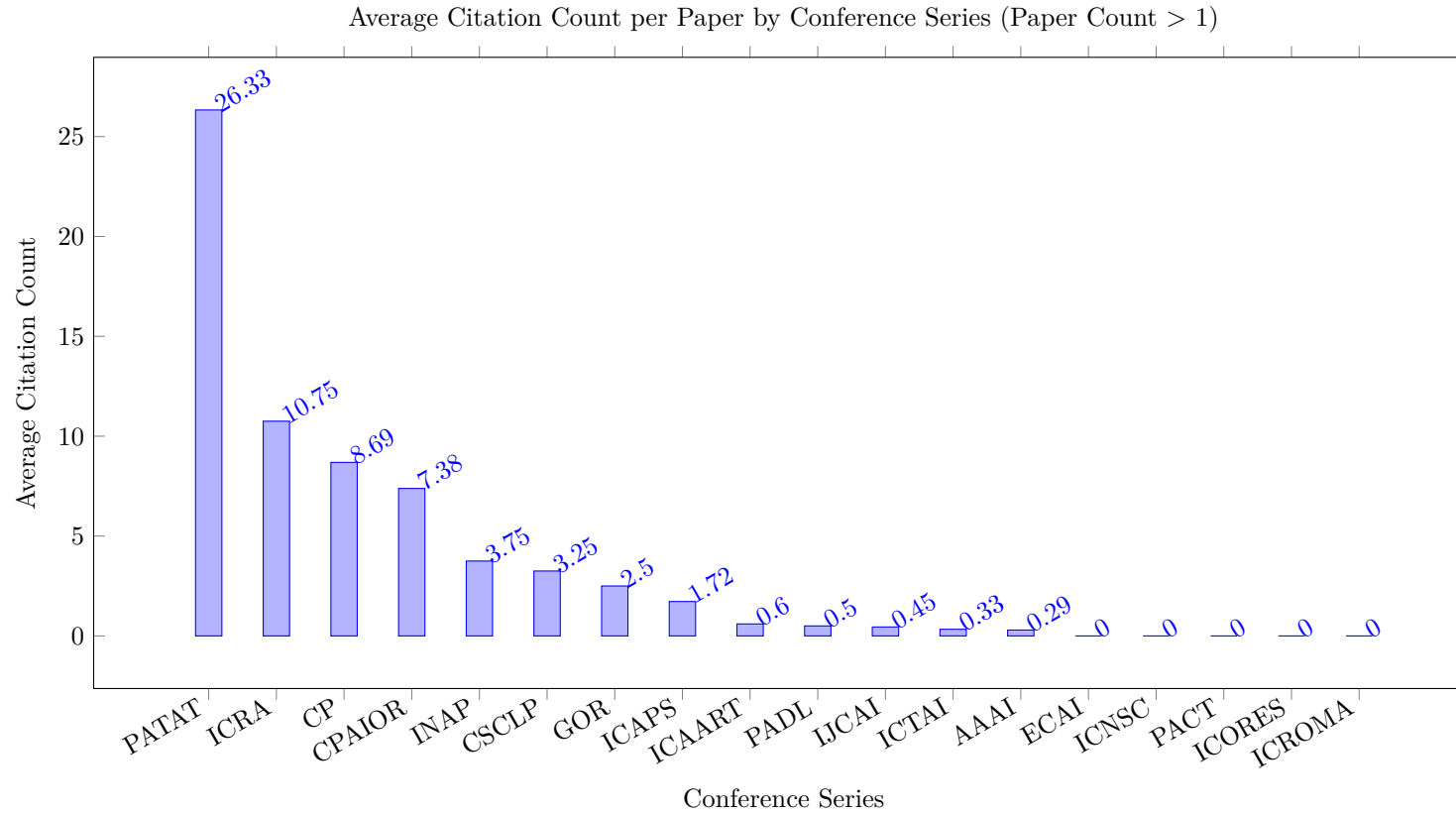
Table 8: Heat Map based on Collaboration between Institutions (Integer Count)

[illegible]

## 5 Conference Papers by Most Common Conference Series

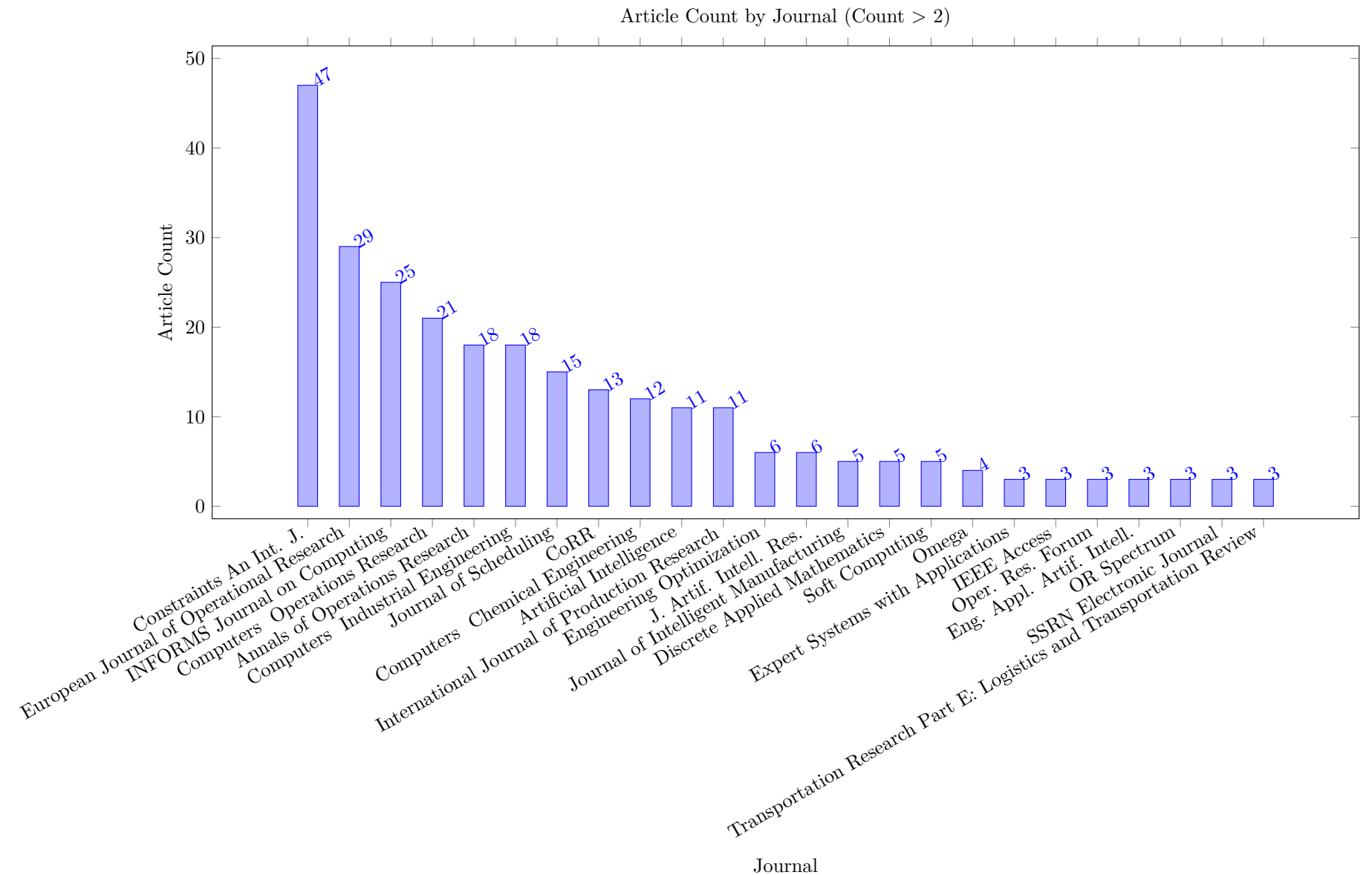




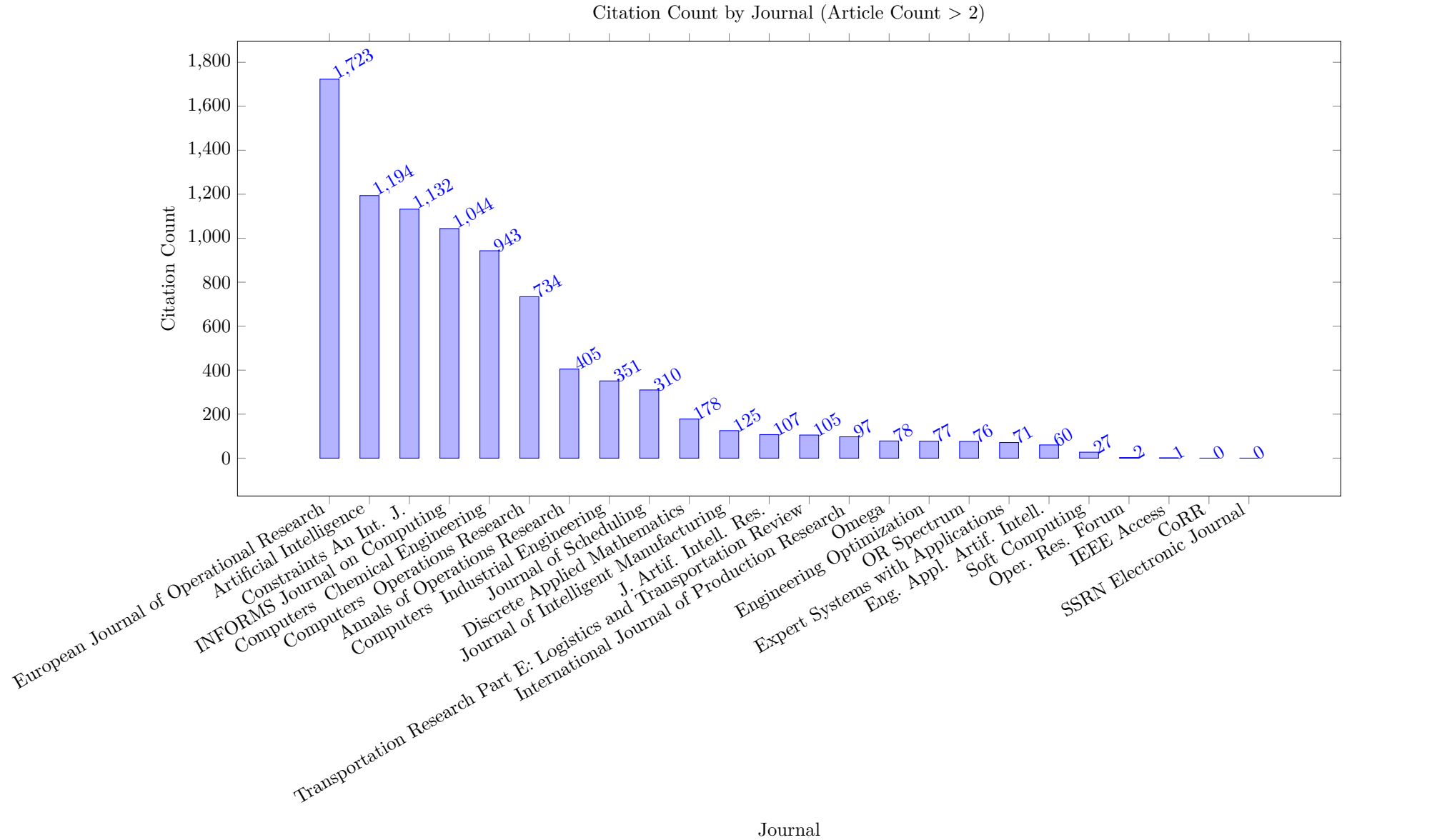


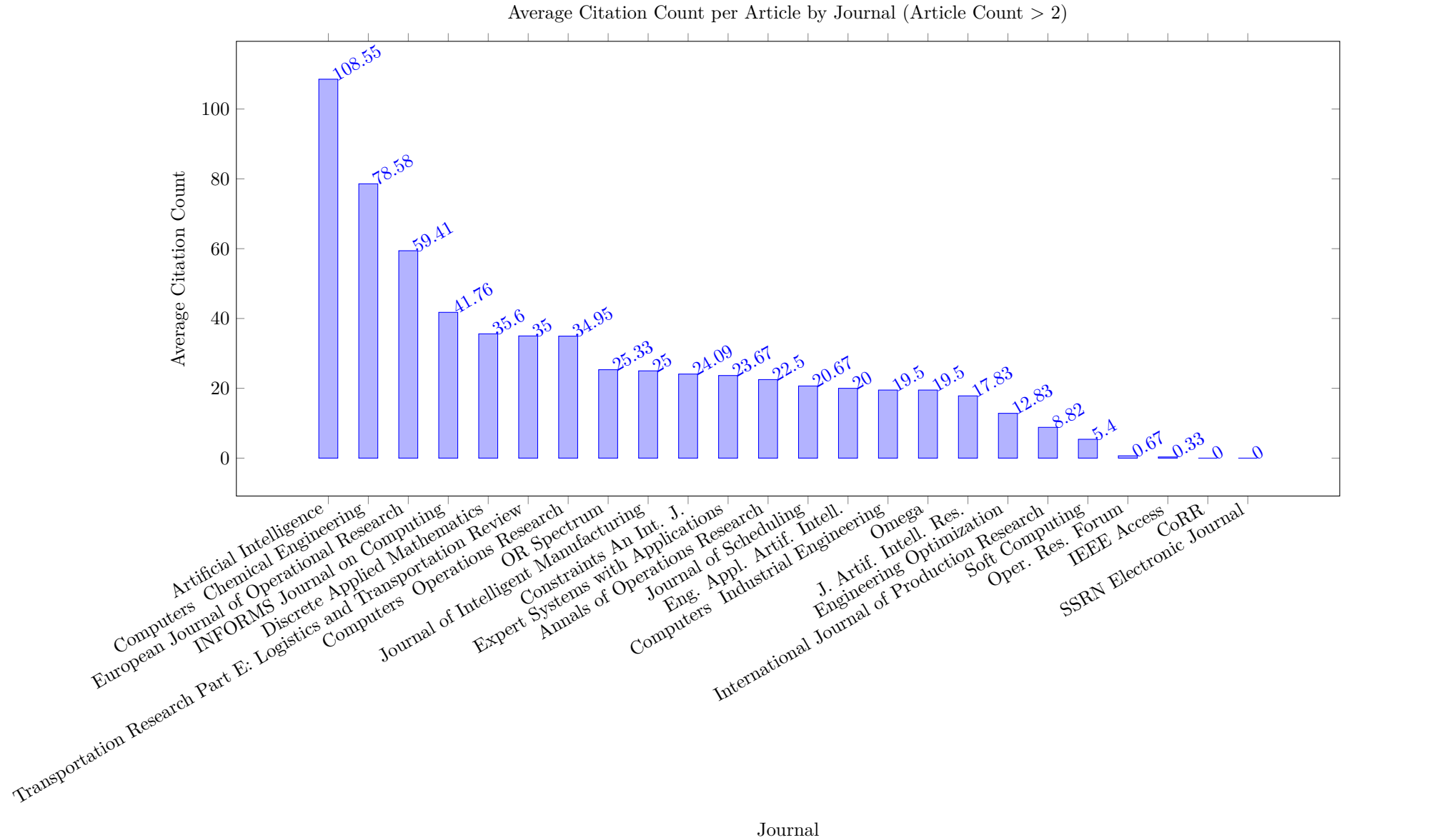


## 6 Journal Articles by Most Common Journals

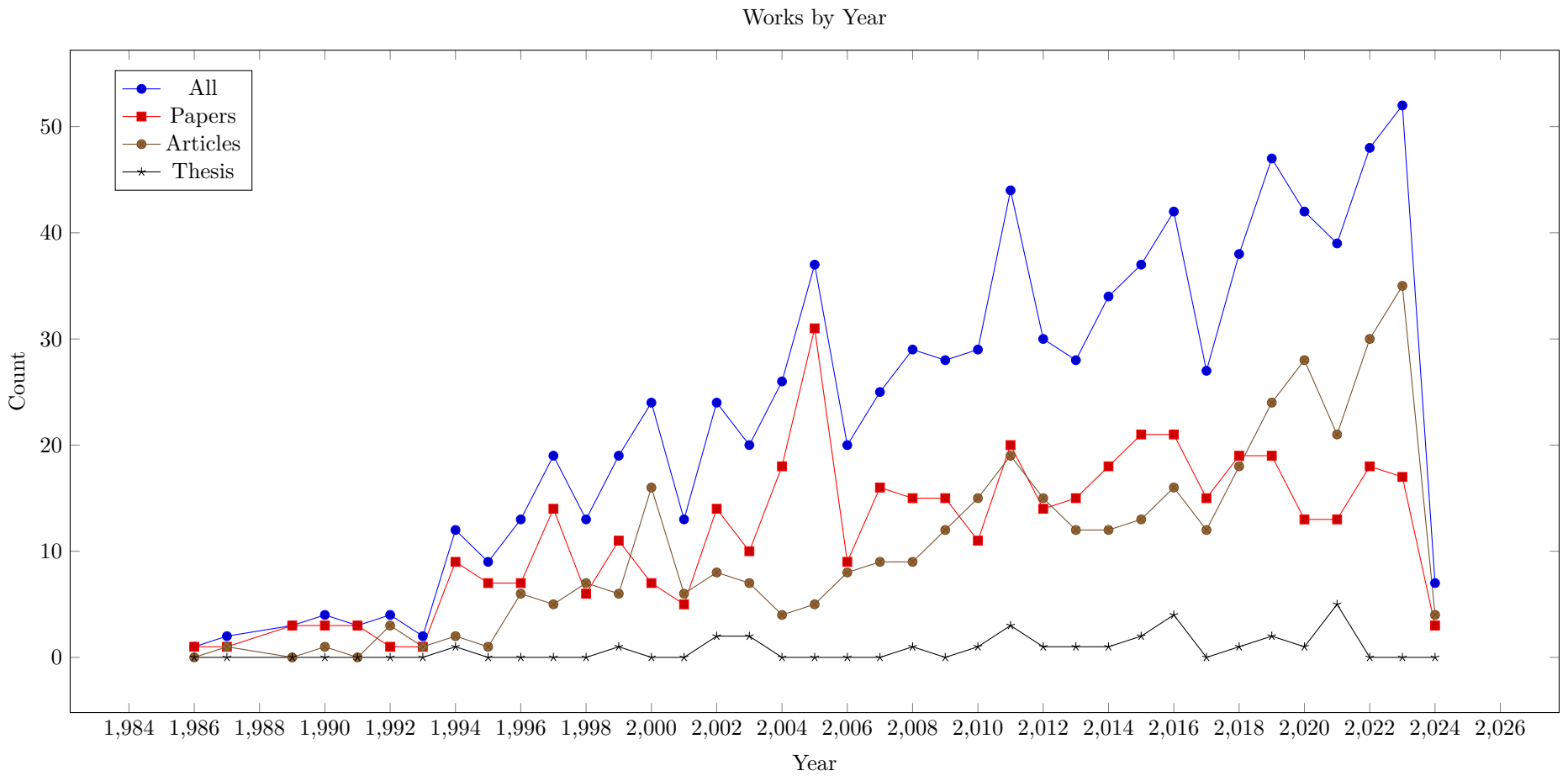


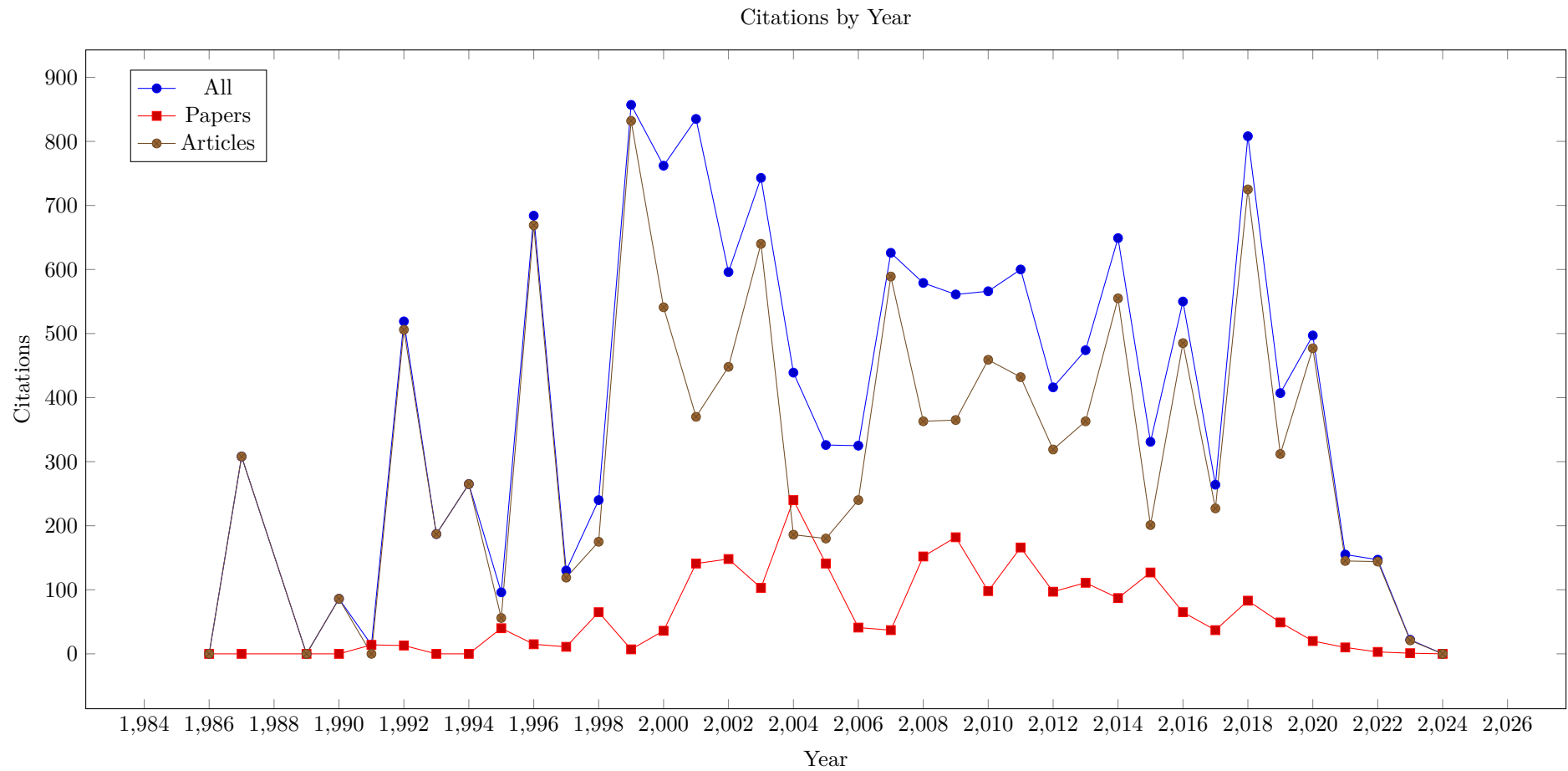


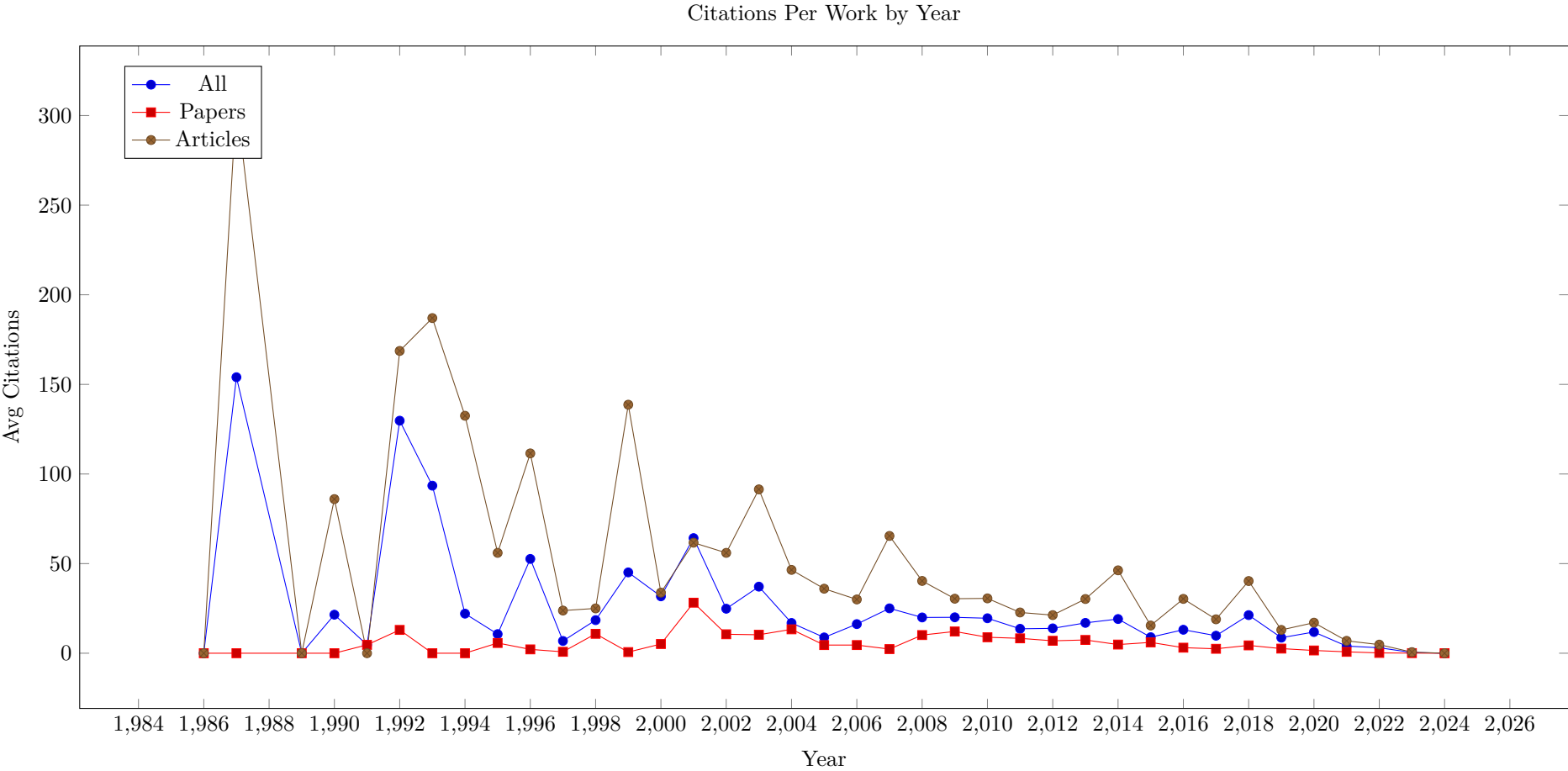




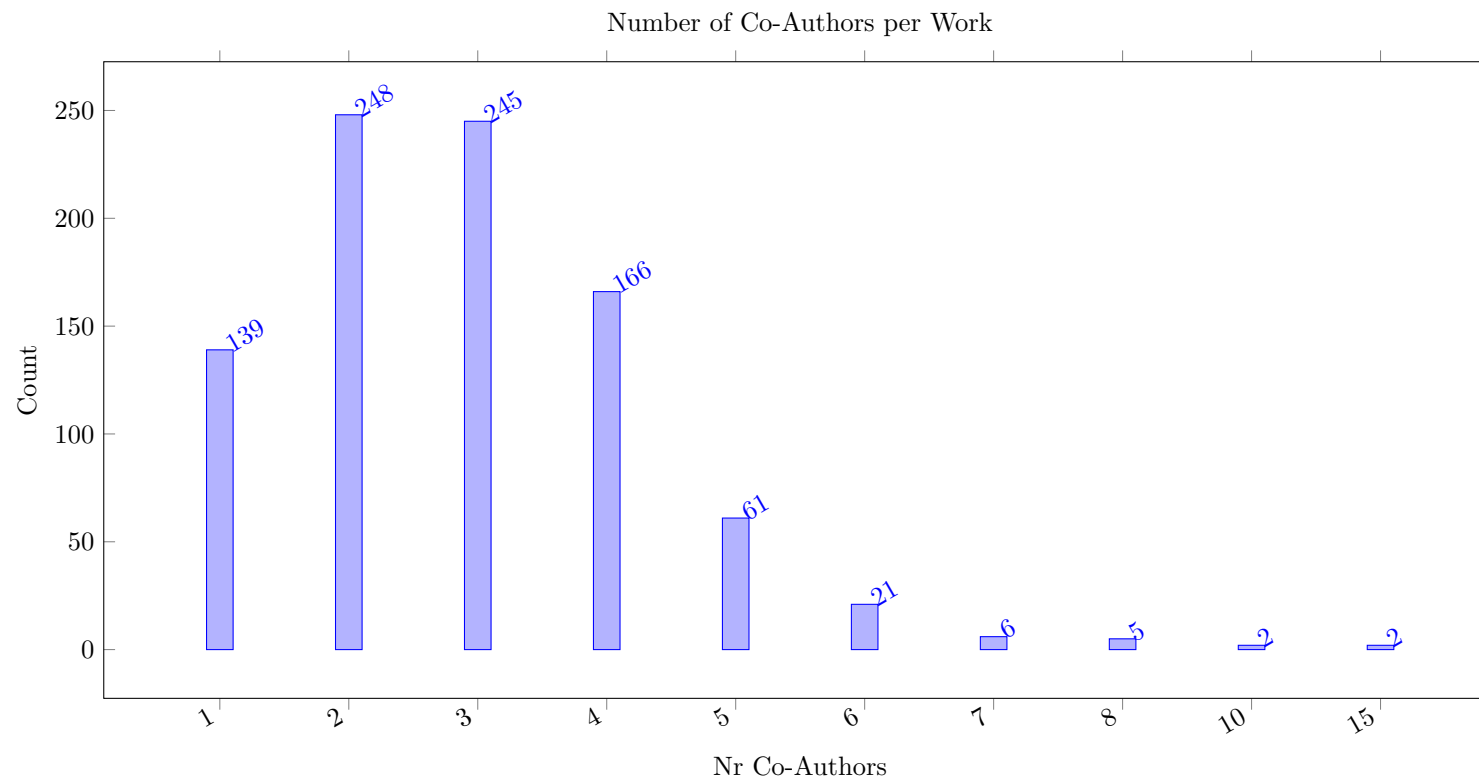
7 Works by Year



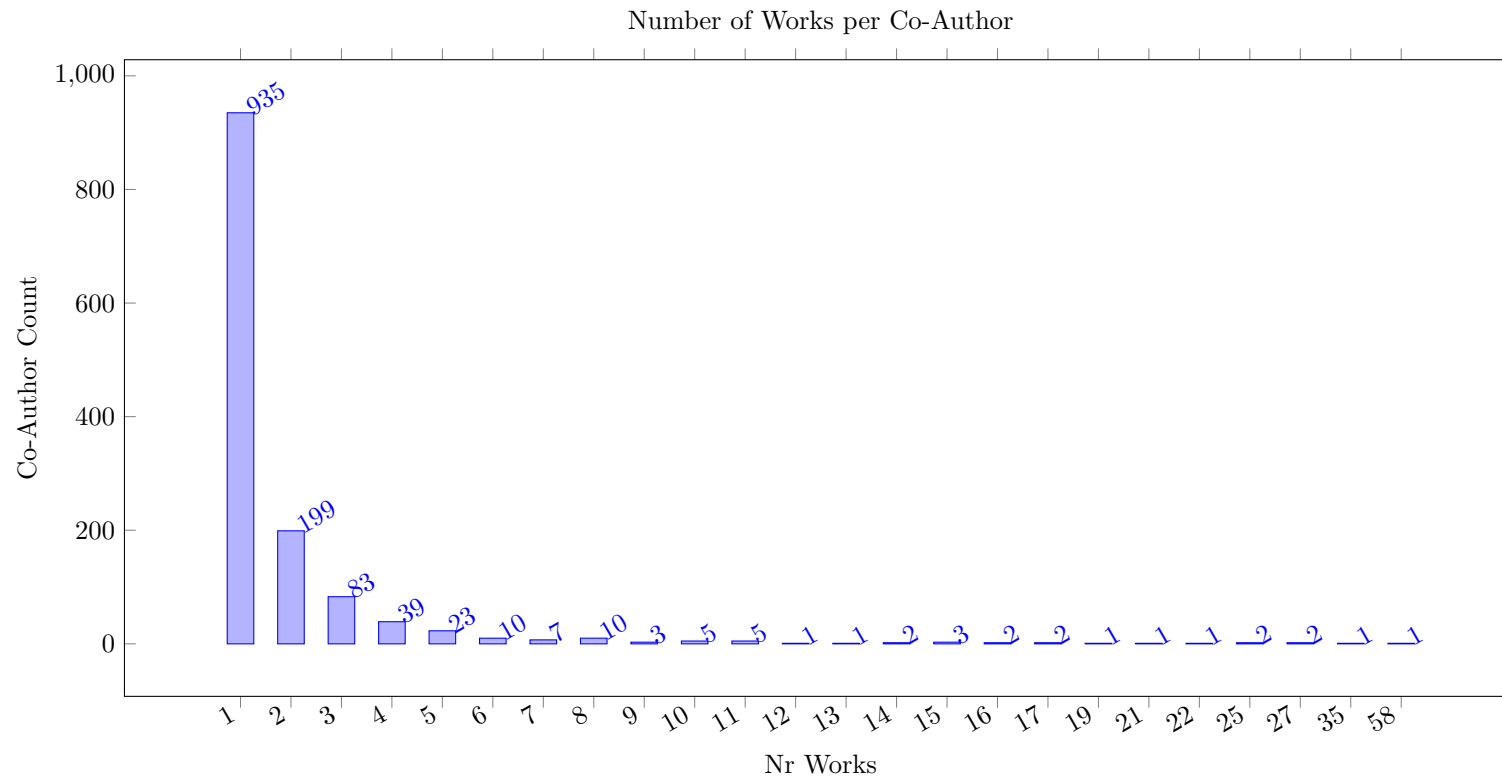




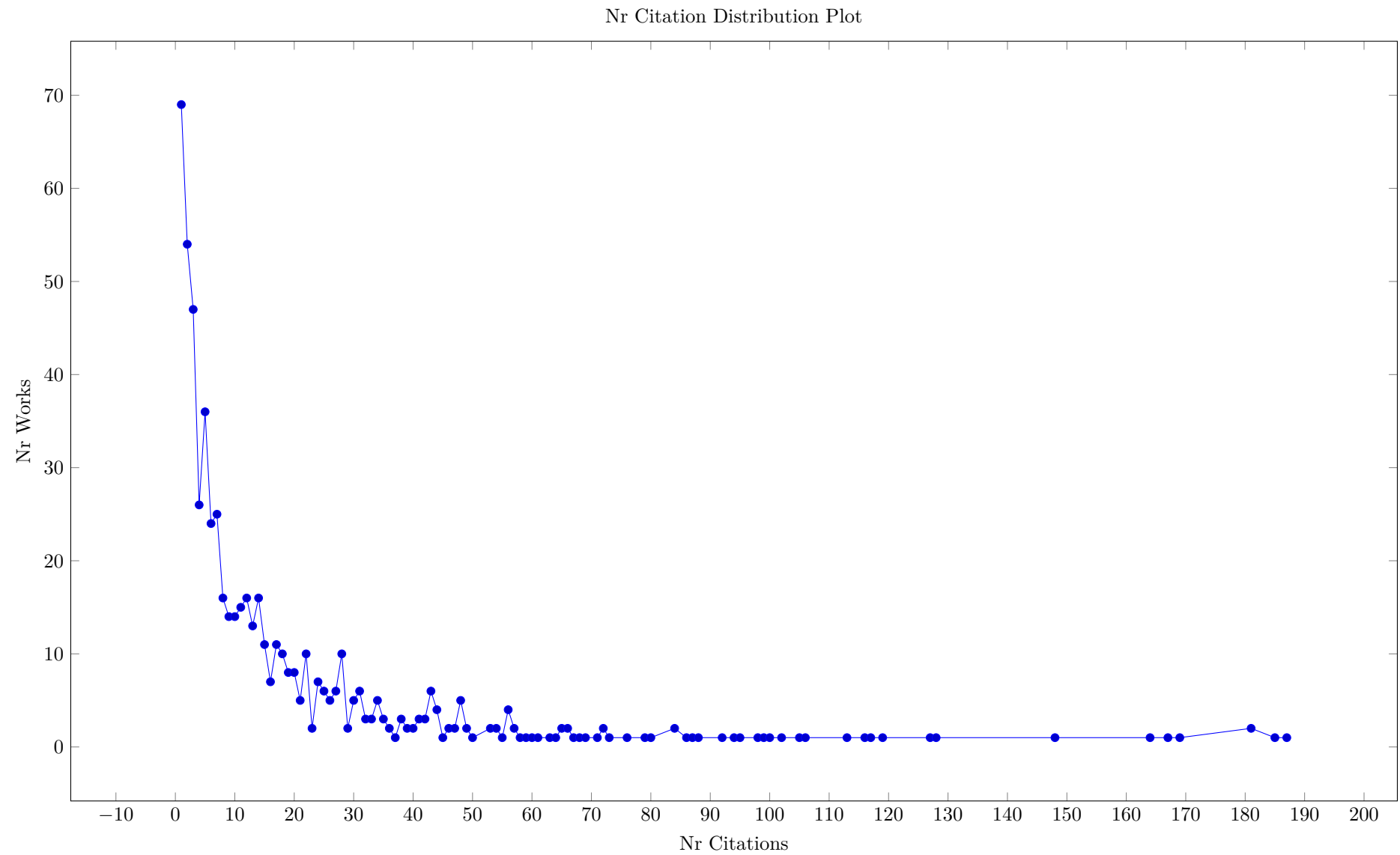
## 8 Number of Coauthors per Work



## 9 Number of Works per Author



## 10 Citation Distribution





## 11 Similarity Measures

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

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

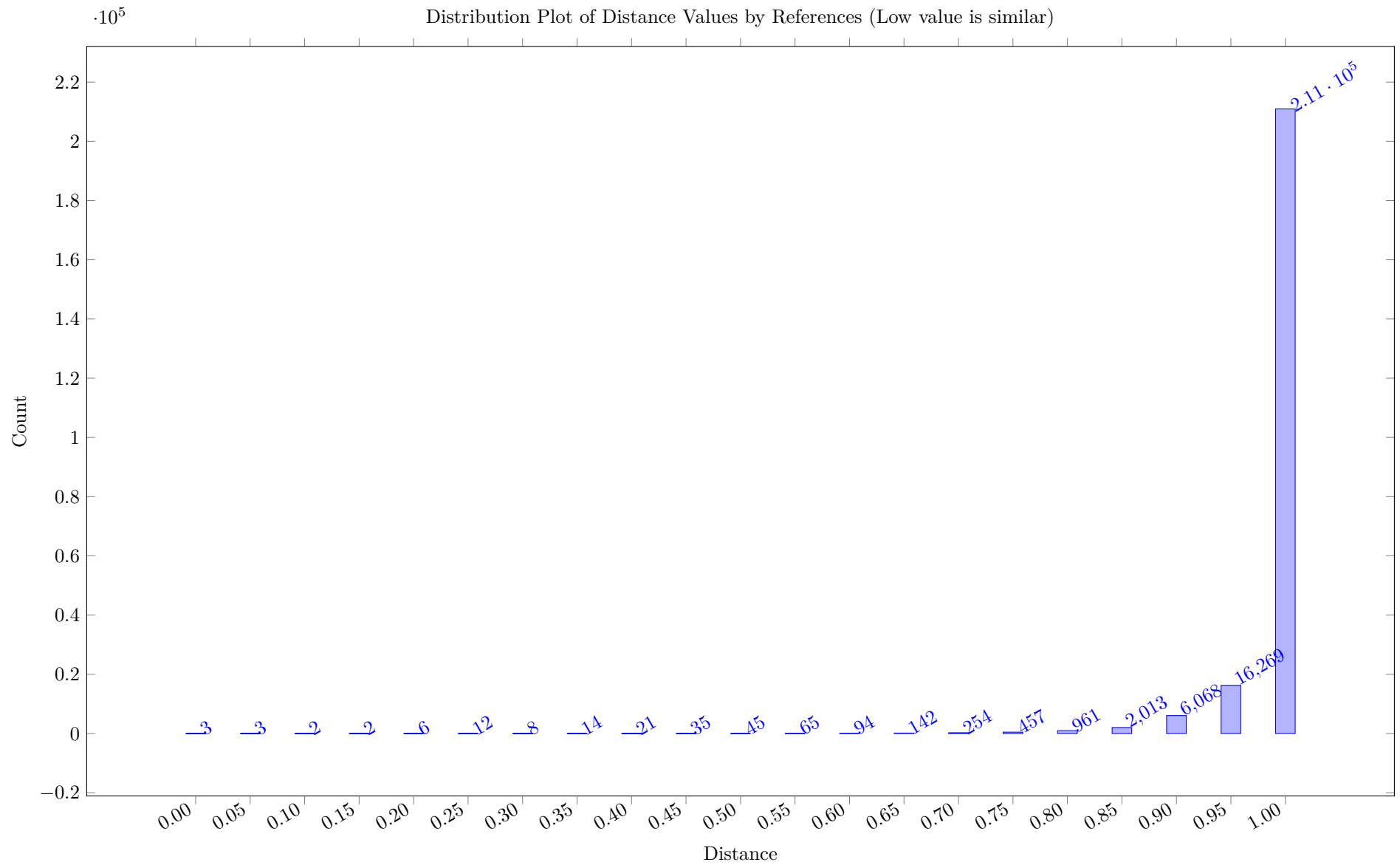
The vast majority of paper pairs has a distance close to one, as their references and citations do not overlap much.

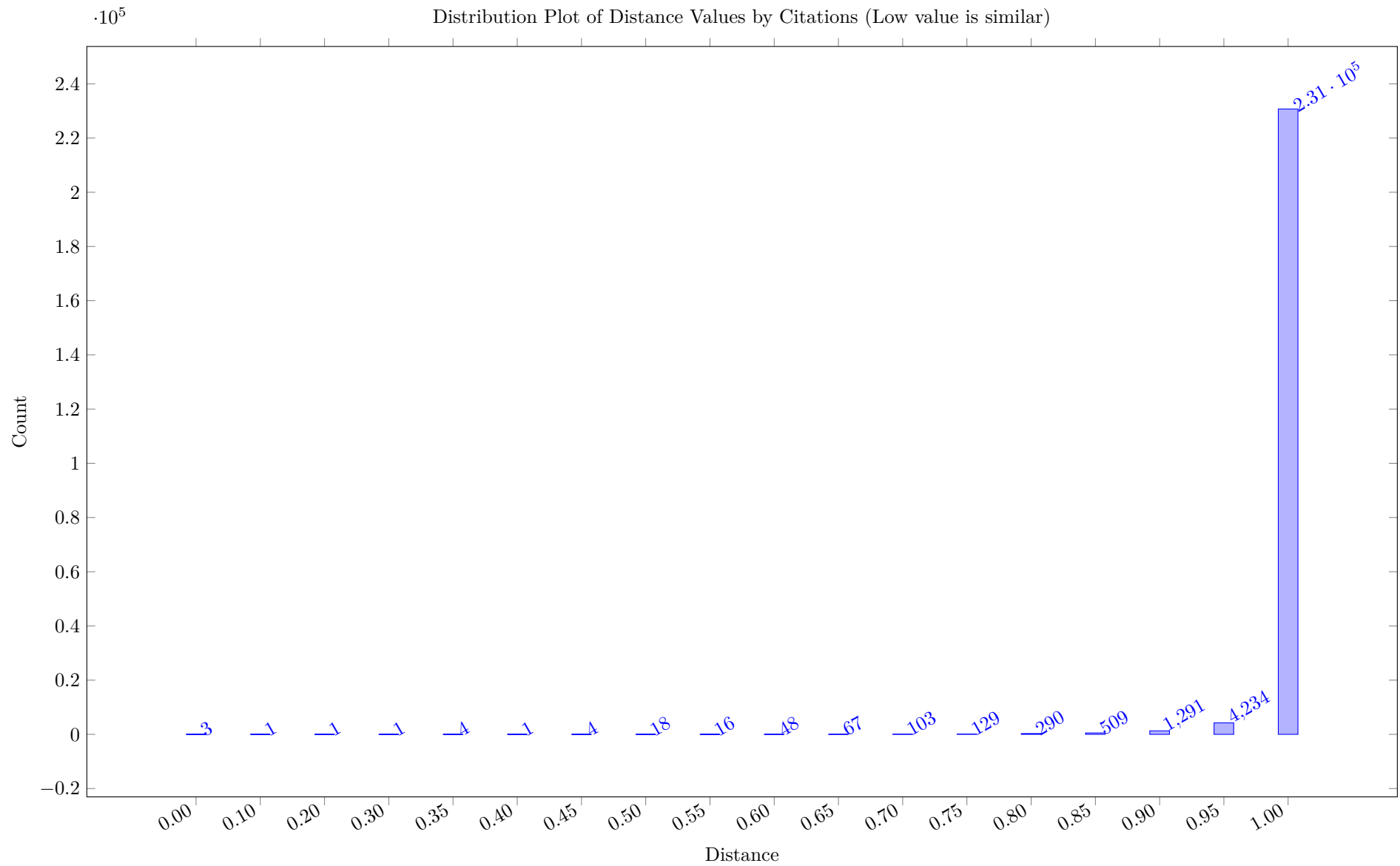
Table 9: Heat Map based on rounded DotProduct Similarity of Concepts (high = similar)

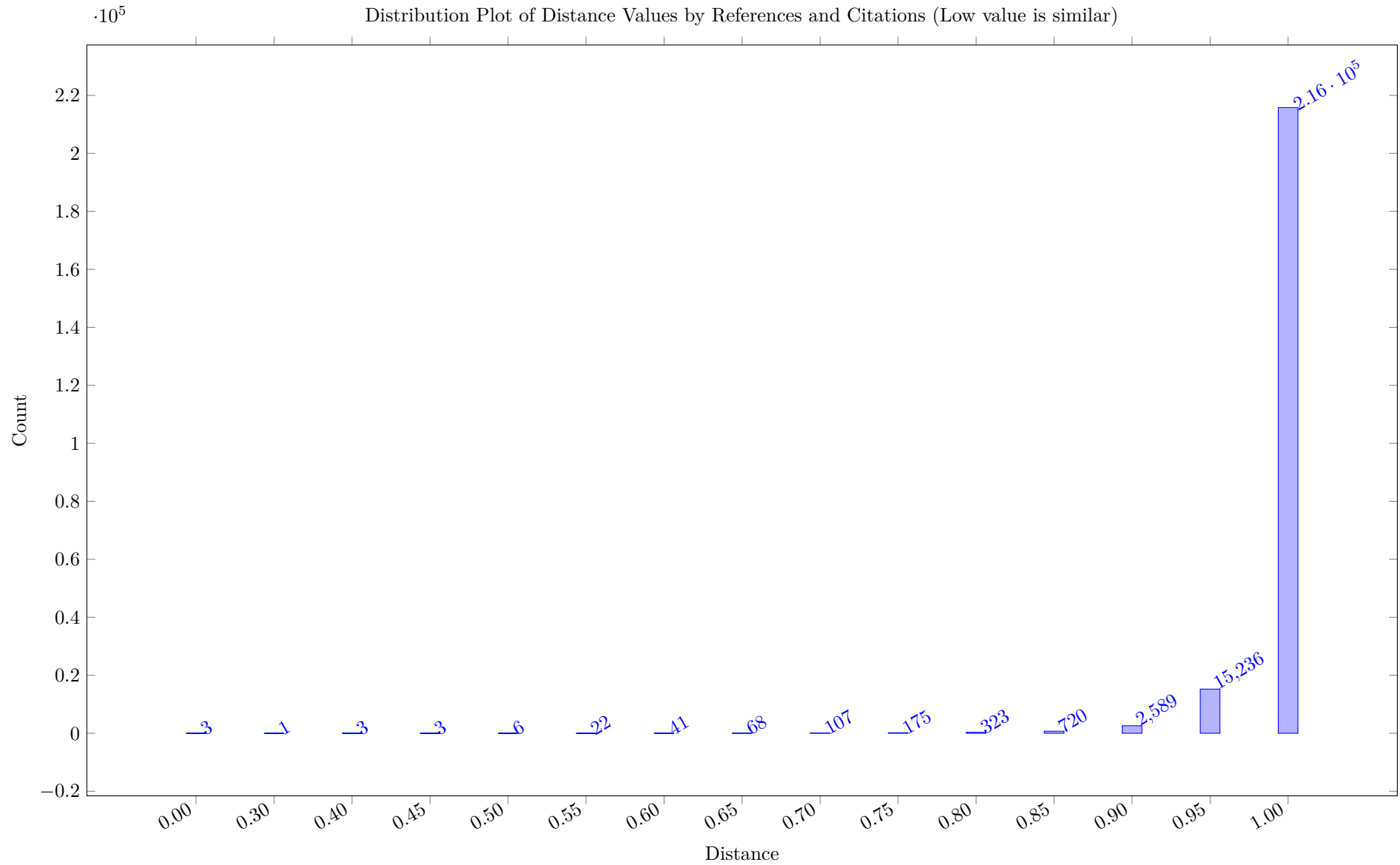
From/To Total	Total																								Other
		ZarandiASC20	Schutt11	abs-1902-09244	YunusogluY22	ZhuSZW23	Siala15a	VilimLS15	abs-2211-14492	abs-1911-04766	abs-2402-00459	ZeballosNH11	YuraszeckMCCR23	ZhangBB22	ZeballosQH10	YuraszeckMPV22	abs-2305-19888	ZeballosH05	Zahout21	Wolf05	TerekhovDOB12	UnsaIO13	abs-1009-0347		
		86,587	65,693	64,543	64,286	62,364	62,124	62,060	61,340	59,770	58,977	58,942	57,707	57,506	56,276	55,660	55,463	55,195	55,060	54,617	54,615	54,359	54,246		
Baptiste02	81,897	333	262	170	198	163	219	166	161	148	135	166	163	153	149	190	144	137	162	154	201	147	128	78,048	
Astrand21	80,937	311	227	173	199	166	191	161	151	157	142	143	144	151	132	172	149	131	152	129	175	168	122	77,291	
Beck99	73,422	243	224	151	161	151	188	149	143	138	137	141	126	129	137	127	123	132	144	141	152	147	131	70,107	
BartakSR10	69,176	236	202	131	158	146	169	137	142	118	120	135	118	142	129	142	115	126	137	140	159	133	101	66,040	
Dejemeppe16	68,930	339	277	194	216	162	245	168	170	171	163	176	151	157	157	159	144	140	170	156	181	171	138	64,925	
AwadMDMT22	67,123	226	168	153	176	134	135	132	133	129	120	150	130	117	130	132	129	123	128	129	149	130	103	64,067	
BeckDDF98	63,584	226	158	144	156	132	158	121	126	111	115	142	110	114	127	113	98	130	115	113	149	123	92	60,711	
AbreuN22	63,366	229	146	137	167	142	128	124	137	108	124	104	134	116	111	161	133	105	117	101	126	115	83	60,518	
AfsarVPG23	62,553	190	137	138	144	128	125	121	132	118	117	108	121	110	117	133	102	107	111	106	119	123	84	59,862	
AbreuPNF23	62,267	232	152	145	175	133	122	111	124	105	123	110	125	106	107	160	126	105	118	103	138	119	82	59,446	
AstrandJZ20	61,571	182	154	131	131	122	150	128	108	109	102	111	114	122	101	119	105	102	100	104	123	117	100	58,936	
ArtiguesLH13	60,675	161	144	121	150	94	122	114	108	109	101	130	94	93	113	95	101	118	108	105	128	109	92	58,165	
ArmstrongGOS21	58,626	174	145	120	144	134	121	116	118	123	104	96	119	116	110	116	118	104	112	99	104	114	83	56,036	
Fahimi16	58,087	242	251	149	144	153	217	153	140	138	118	140	131	134	130	133	122	128	129	157	160	156	120	54,742	
Groleaz21	57,978	371	240	195	224	195	228	189	191	171	179	160	159	178	144	203	162	131	193	136	205	158	132	53,834	
BartakSR08	57,958	161	161	106	120	119	145	118	112	95	102	102	102	116	95	115	89	100	97	108	121	106	85	55,483	
ColT22	57,662	251	163	152	178	156	161	141	147	153	138	139	142	132	126	157	136	122	135	113	133	138	95	54,454	
BeckF98	57,614	186	152	121	128	128	151	122	115	108	114	109	106	105	103	102	97	105	118	114	122	115	99	54,994	
ArkhipovBL19	57,490	143	169	109	110	101	124	138	98	103	93	92	114	107	93	85	95	84	103	109	109	102	116	55,093	
AbreuNP23	57,342	203	131	131	157	137	119	116	124	94	107	102	126	112	100	150	125	92	102	90	121	103	70	54,730	
BlazewiczDP96	56,643	238	177	129	144	131	146	121	129	103	117	112	101	134	107	129	103	100	120	118	147	114	102	53,821	
Caballero19	56,516	175	239	128	122	117	202	158	106	121	93	110	126	118	112	84	109	99	122	111	119	126	160	53,659	
BajestaniB13	56,496	185	119	114	127	118	110	109	102	89	100	114	86	94	89	98	86	87	108	90	131	96	79	54,165	
AbreuAPNM21	55,865	208	128	121	147	127	114	103	119	90	113	89	121	107	96	152	111	86	110	89	124	93	68	53,349	
BaptisteP00	55,199	139	165	105	101	97	142	122	91	102	82	102	103	101	94	83	83	87	106	111	112	112	107	52,852	
AlfieriGPS23	54,996	190	118	132	141	116	107	99	116	82	114	102	110	109	90	130	94	97	97	91	128	94	73	52,566	
BeckF00	54,941	156	168	109	106	115	160	117	102	96	87	108	94	106	95	93	79	99	87	110	115	109	98	52,532	
Godet21a	54,753	259	257	152	163	148	242	171	157	159	130	126	158	146	130	144	130	124	158	136	164	154	151	51,194	
BaptisteP97	54,638	144	165	111	98	94	136	123	88	104	84	101	104	98	88	83	80	85	104	110	112	111	109	52,306	
BaptistePN99	54,237	153	161	113	108	93	127	123	95	103	89	90	111	97	88	98	85	81	106	113	121	97	99	51,886	
BidotVLB09	53,682	190	134	132	137	106	128	116	105	102	101	120	113	102	114	112	90	115	95	103	131	97	93	51,146	
BeckPS03	53,059	157	138	126	124	108	131	116	110	97	98	115	111	101	107	100	92	113	91	107	118	102	92	50,605	
BeckW07	53,037	171	141	124	108	103	128	123	103	93	94	98	117	103	97	104	87	101	108	107	121	91	104	50,611	
BonninMNE24	52,812	172	159	113	122	112	131	119	104	110	99	98	106	113	99	131	101	99	109	123	128	119	99	50,246	
ArtiguesF07	52,415	149	146	100	127	120	132	117	108	70	91	95	100	129	92	111	98	88	85	99	109	87	84	50,078	
BonfiettiLBM14	52,123	138	159	109	104	107	145	134	96	102	95	105	105	104	94	81	88	94	99	103	103	107	116	49,735	
Adelgren2023	51,743	139	105	86	106	98	93	93	91	84	80	87	85	92	80	100	99	79	92	90	92	95	66	49,711	
BosiM2001	51,384	156	156	107	128	105	152	128	115	100	105	105	112	120	105	103	98	95	101	100	123	93	101	48,876	
AstrandOF21	51,254	123	117	96	97	98	120	106	91	97	94	81	98	103	88	93	86	90	83	86	93	95	81	49,138	
AntuoriHHEN20	51,068	134	118	103	99	80	110	92	109	86	99	91	78	88	82	82	68	87	77	79	97	81	80	49,048	
Bit-Monnot23	50,648	136	152	105	98	118	174	127	105	103	98	92	105	119	86	104	86	91	96	99	101	99	107	48,247	
ChenGPSH10	50,431	168	158	98	106	118	146	121	110	96	96	115	97	110	102	103	82	103	96	114	115	114	95	47,968	
Other		78,268	58,650	59,159	58,437	57,139	55,830	56,697	56,308	55,075	54,364	54,130	52,837	52,602	51,730	50,578	51,015	50,773	50,259	49,921	49,136	49,479	50,026		

Table 10: Heat Map based on 100\*Cosine Similarity of Concepts (high = similar)

From/To Total	Total	ZeballosH05	abs-2312-13682	ZeballosM09	VilimLS15	abs-1901-07914	ZhangYW21	Wolf05	ZeballosQH10	ZouZ20	abs-2305-19888	abs-1902-09244	VilimBC05	abs-2306-05747	WikarekS19	VilimBC04	ZeballosNH11	abs-1009-0347	WatsonB08	ZhangBB22	abs-2211-14492	ZibranR11a	Wolfs05	Other
		42,068	41,798	41,762	41,175	40,857	40,668	40,578	40,323	39,986	39,885	39,820	39,816	39,751	39,749	39,721	39,692	39,474	39,425	39,392	39,382	39,380	39,069	
ArkhipovBL19	41,330	57	55	57	81	56	67	72	59	51	61	60	65	58	72	63	55	75	62	66	56	46	65	39,971
BartakSR08	41,324	67	57	59	69	60	63	70	60	57	57	58	76	60	72	76	60	54	66	71	64	51	57	39,940
BeckPS03	41,139	82	62	75	73	67	71	75	73	57	63	75	73	67	72	73	74	64	75	66	68	54	54	39,626
Bartak02a	40,896	67	61	61	71	64	62	66	62	59	53	57	70	58	68	71	60	64	63	60	60	49	60	39,530
AfsarVPG23	40,519	65	54	63	65	53	74	63	68	59	59	69	59	67	56	62	59	49	69	61	69	50	46	39,180
AstrandJZ18	40,460	67	70	68	64	71	54	62	65	58	56	52	61	53	57	59	55	65	58	54	51	67	63	39,130
AstrandJZ20	40,416	63	61	62	69	56	67	63	59	53	62	66	69	64	65	68	61	59	68	68	57	52	44	39,060
ArtiguesLH13	39,560	72	58	68	61	52	49	63	65	56	59	61	60	49	54	60	70	54	52	52	56	58	61	38,270
Beck07	39,374	65	58	65	73	57	73	69	60	55	54	65	69	70	65	75	60	62	86	72	68	61	44	37,948
Astrand0F21	39,321	64	64	57	66	65	68	60	59	48	59	56	64	63	65	62	51	55	64	67	55	46	50	38,013
AalianPG23	39,260	59	73	62	61	59	54	57	59	55	61	58	58	56	52	59	49	63	55	52	44	61	63	37,990
Adelgren2023	39,254	56	60	55	58	58	60	62	54	49	67	50	53	56	57	52	55	45	59	59	55	47	54	38,033
AbidinK20	39,074	55	56	55	53	50	58	47	60	70	51	56	53	46	51	47	57	52	51	51	49	64	61	37,881
AngelsmarkJ00	39,059	55	50	63	56	60	49	61	50	49	45	39	54	48	57	53	53	43	56	50	53	52	63	37,900
BaptisteP97	38,629	56	54	59	71	49	64	71	55	54	50	60	71	55	64	73	59	69	57	59	50	53	59	37,317
Alaka21	38,453	60	56	53	53	57	63	53	60	68	55	53	56	48	53	49	47	55	48	53	49	53	58	37,253
AwadMDMT22	38,295	66	53	61	62	47	65	68	66	57	66	68	61	58	58	58	72	53	58	58	61	51	54	36,974
ArtiguesBF04	38,240	58	51	53	69	49	69	67	60	41	63	54	71	62	73	69	59	55	76	79	61	43	38	36,920
BeckDDF98	38,211	73	58	71	60	62	63	62	68	56	53	67	65	58	67	66	71	50	61	58	60	55	49	36,858
AkramNHRSA23	38,174	56	57	54	56	63	62	59	55	56	59	47	49	58	46	48	43	51	59	50	63	58	61	36,964
Beck06	38,089	67	62	64	65	62	66	67	59	43	53	63	63	69	68	67	61	52	86	68	69	52	44	36,719
BeckFW11	38,006	62	63	61	74	60	72	70	63	46	62	62	65	78	70	71	54	60	93	74	72	52	49	36,573
Bartak02	37,778	59	53	67	61	59	47	61	53	57	44	45	64	45	68	63	61	52	51	50	49	56	61	36,552
BeckF98	37,744	64	49	57	65	63	70	68	60	55	57	61	67	60	66	69	59	58	63	59	60	46	49	36,419
ArtiguesF07	37,677	60	49	52	70	48	71	66	59	43	64	56	72	60	70	70	58	55	72	80	63	39	37	36,363
BartakSR10	37,645	65	48	58	62	60	61	70	63	51	56	55	70	55	71	68	62	50	58	66	62	43	55	36,336
BaptisteB18	37,636	55	61	58	67	61	55	70	54	47	58	49	62	51	63	62	54	68	54	52	47	47	66	36,375
BeckF00a	37,628	64	52	66	64	59	56	70	57	57	48	50	79	53	64	78	62	55	64	56	53	55	55	36,311
BaptisteP00	37,623	56	52	58	68	47	61	69	57	52	51	55	68	53	64	71	58	65	58	59	50	51	58	36,342
BeckW07	37,549	67	55	60	71	61	70	69	60	58	55	67	69	60	68	71	57	66	66	62	58	52	49	36,178
BaptistePN99	37,546	53	51	52	70	45	66	72	54	44	53	60	67	55	67	69	52	62	58	57	53	45	55	36,286
BockmayrP06	37,389	65	73	69	64	69	49	62	64	55	60	55	60	55	60	57	57	61	58	53	55	61	78	36,049
AlakaP23	37,363	55	52	51	51	60	63	46	58	66	51	50	52	44	54	46	48	52	45	50	45	51	54	36,219
Astrand21	37,262	57	52	54	62	49	61	55	55	52	62	62	61	57	57	59	55	51	56	60	56	47	41	36,041
BeckDSF97a	37,204	63	51	67	65	61	64	69	58	50	48	58	73	59	62	79	60	56	72	61	59	55	44	35,870
BeckDSF97	37,162	59	53	62	64	55	60	65	55	53	47	56	75	55	64	79	61	55	60	56	55	52	54	35,867
AlesioBNG15	37,081	53	51	55	54	56	60	59	57	65	56	47	49	52	49	49	53	46	54	50	53	64	61	35,888
Beck99	36,971	63	52	60	62	56	65	65	61	56	56	59	68	57	61	69	59	59	63	56	58	49	52	35,665
AlakaPY19	36,924	58	50	51	51	54	59	49	57	68	52	51	53	43	49	45	47	52	41	49	46	50	59	35,790
BaptisteP95	36,907	57	43	62	58	48	53	75	56	49	45	43	65	48	60	66	59	48	55	57	54	51	58	35,697
BeniniLMR11	36,846	66	62	65	67	61	56	63	64	65	58	57	61	53	58	61	65	73	56	56	52	59	59	35,509
AbreuN22	36,782	58	56	48	60	49	66	54	58	49	70	62	52	63	57	53	51	44	62	58	64	42	48	35,558
Other		39,479	39,440	39,244	38,489	38,459	38,062	37,894	37,824	37,697	37,526	37,426	37,144	37,372	37,155	37,056	37,269	37,097	36,837	36,897	37,000	37,190	36,779	

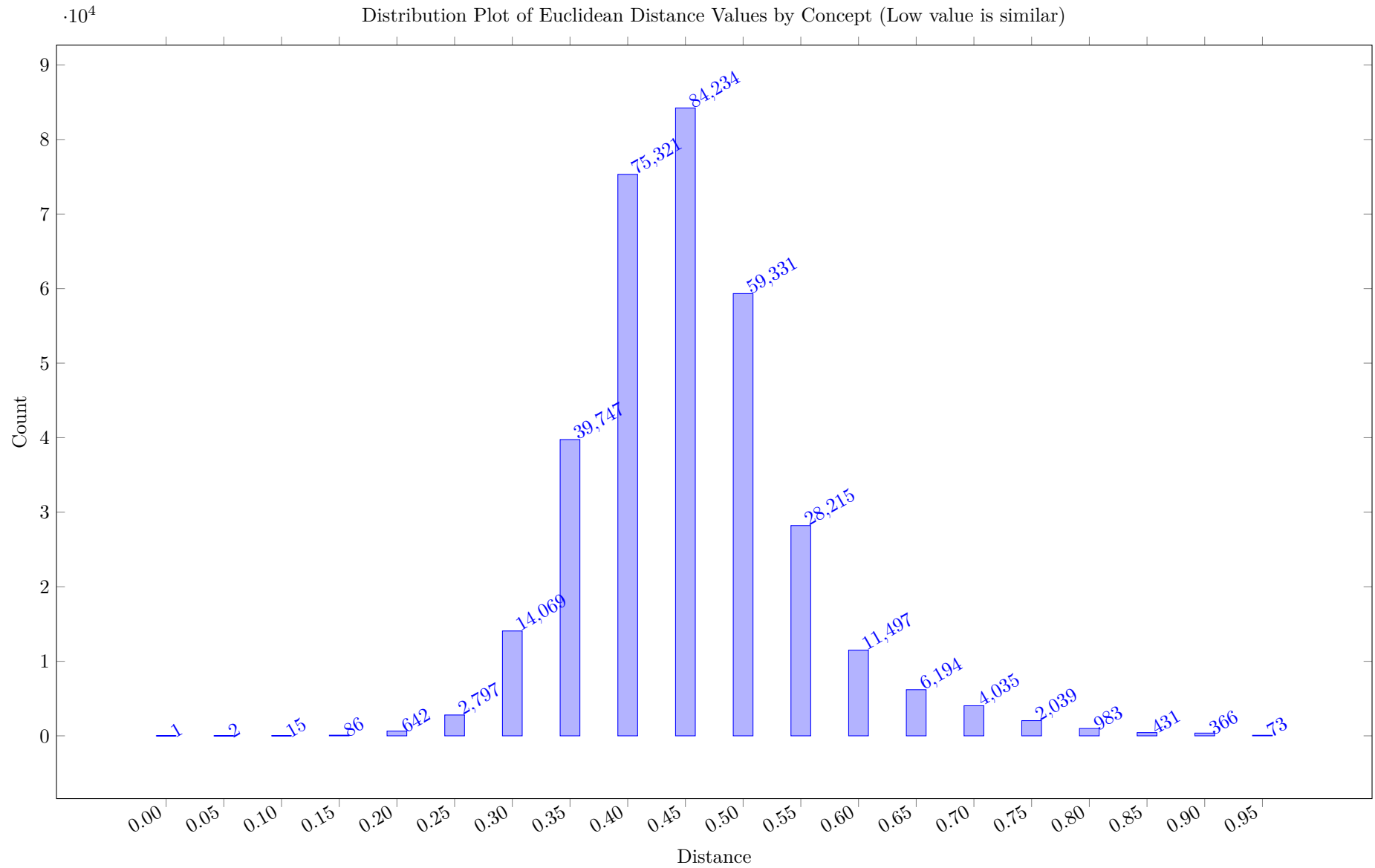




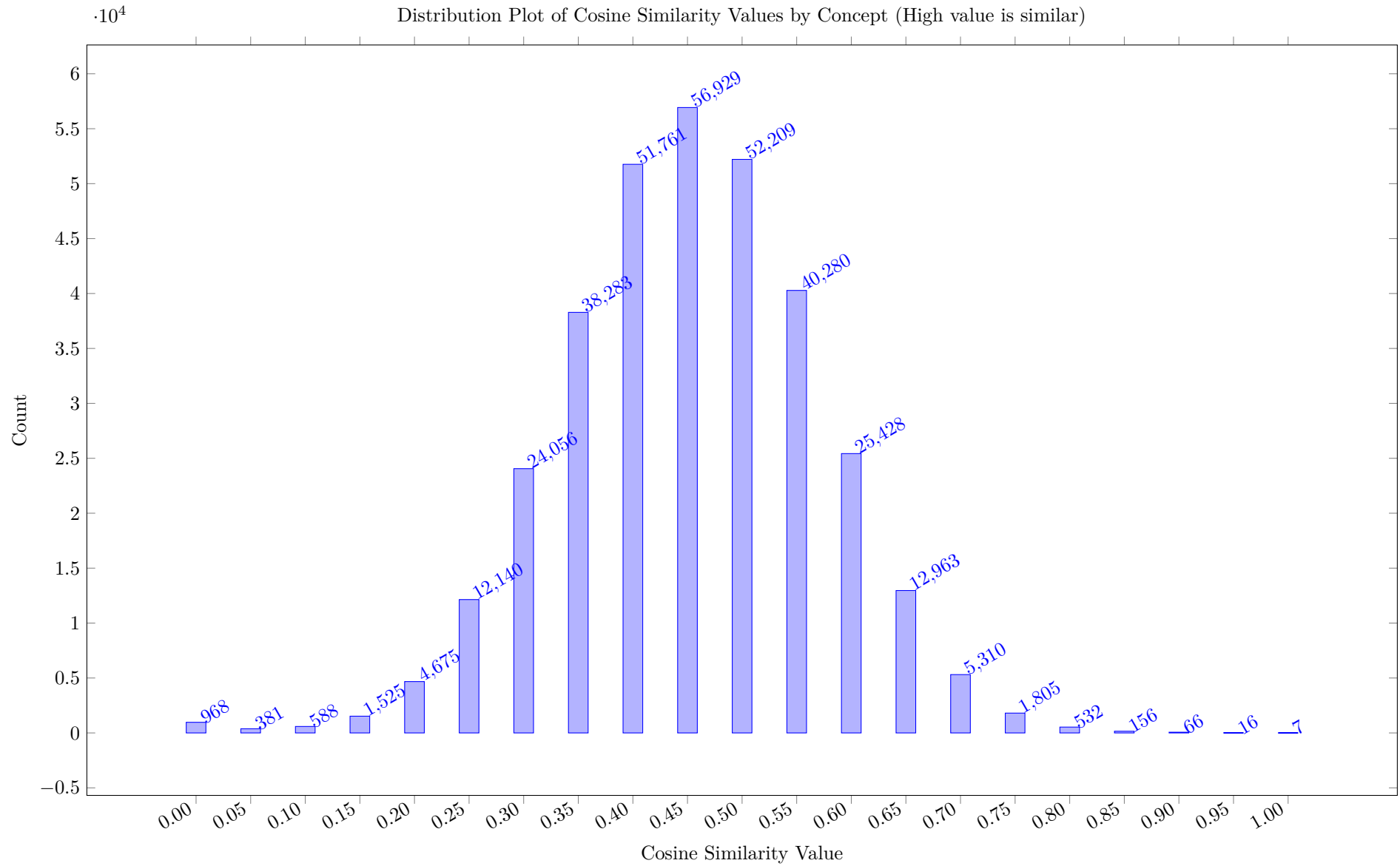


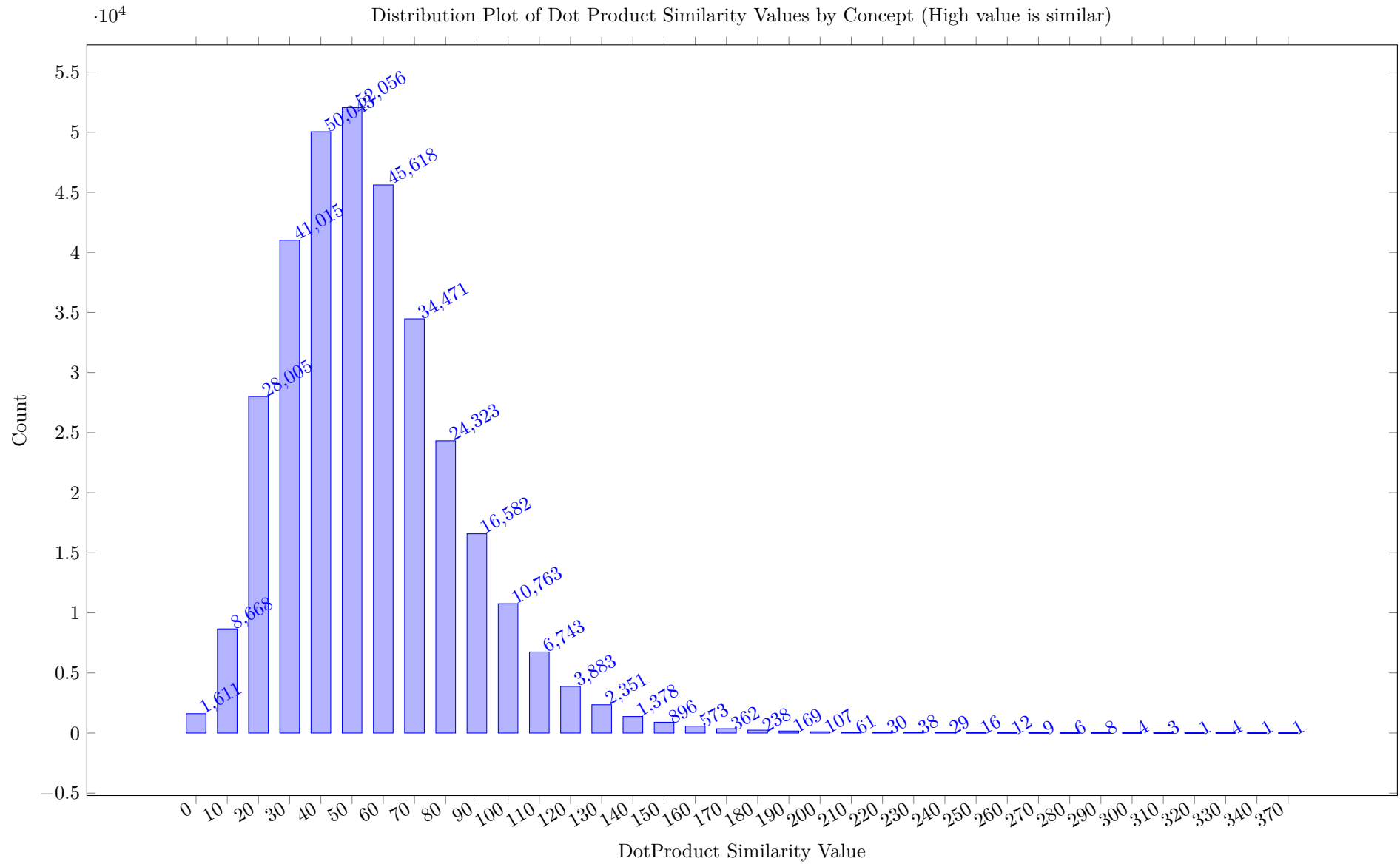
The similarity by concept uses the Euclidean distance between the feature vectors for two works. We translate the MatchLevel for each Concept into a linear

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.





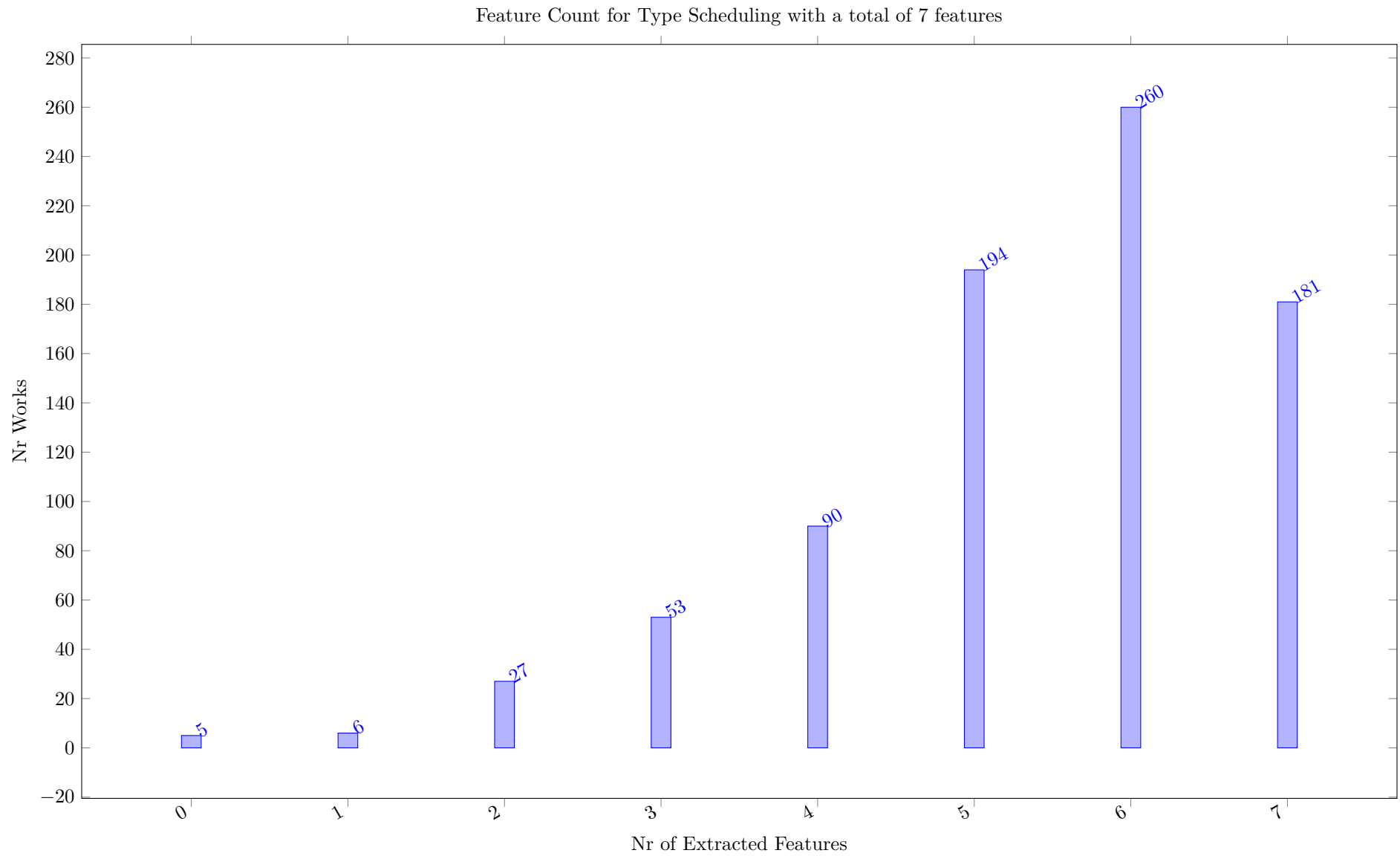


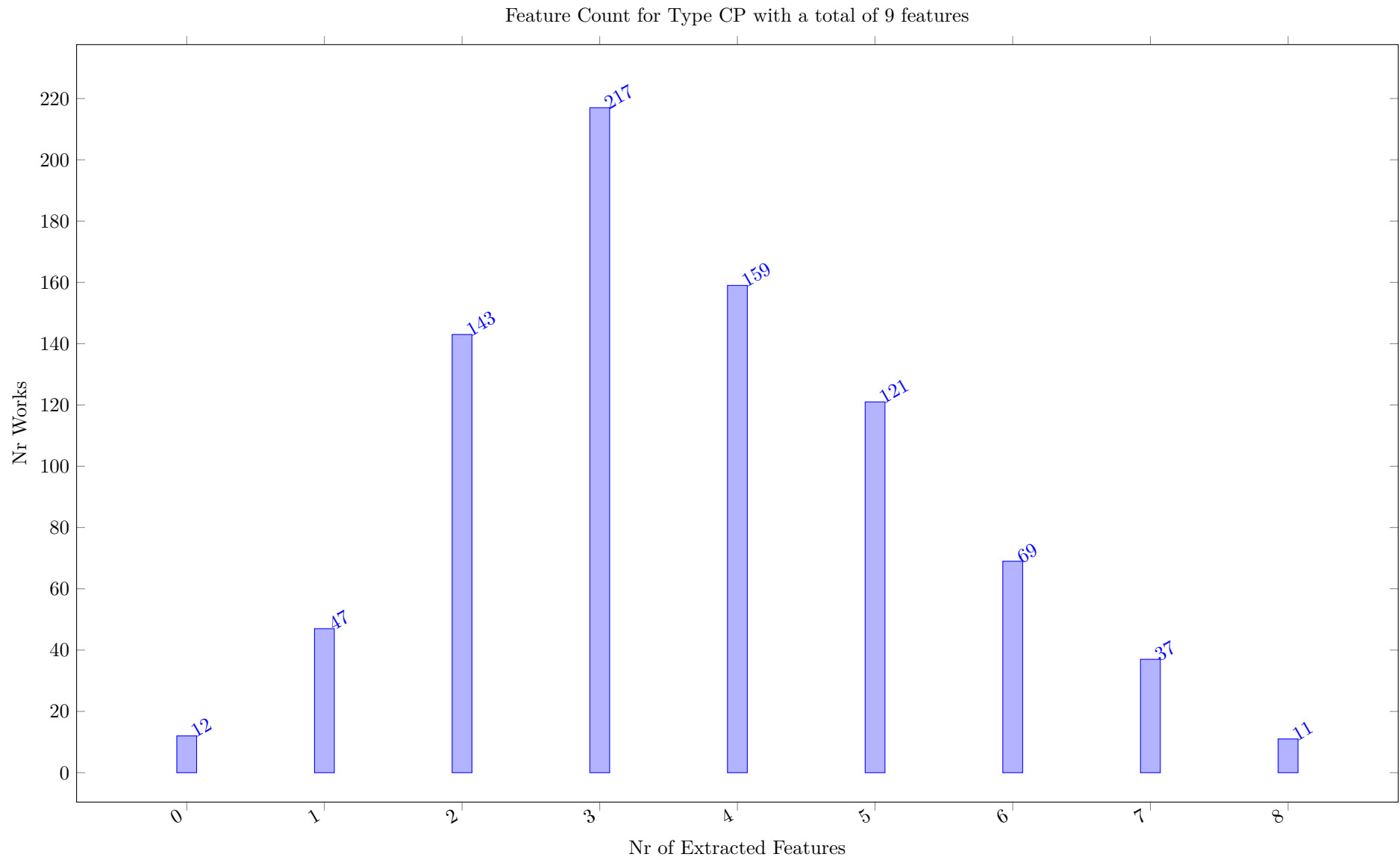


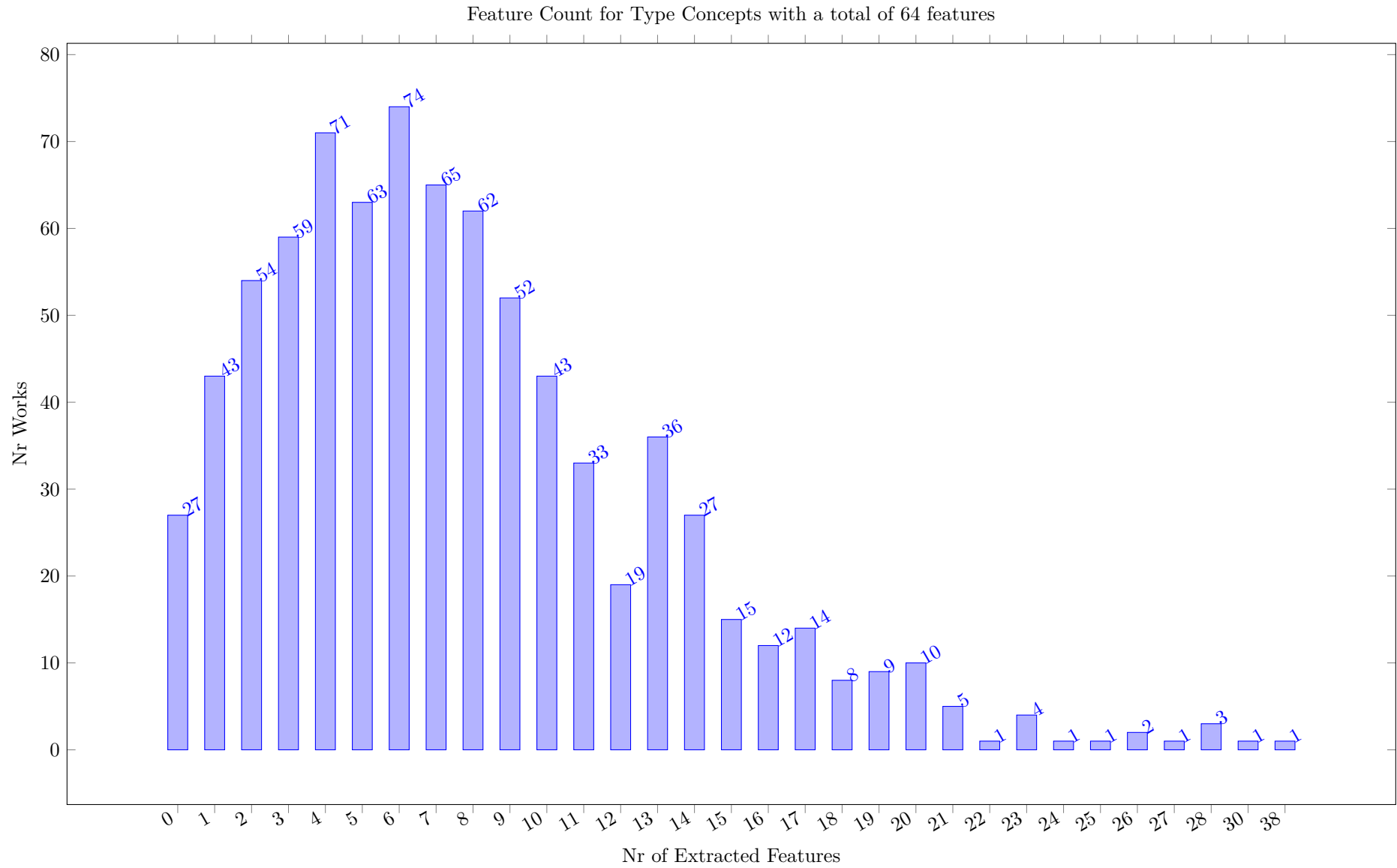
## 12 Concept Distribution

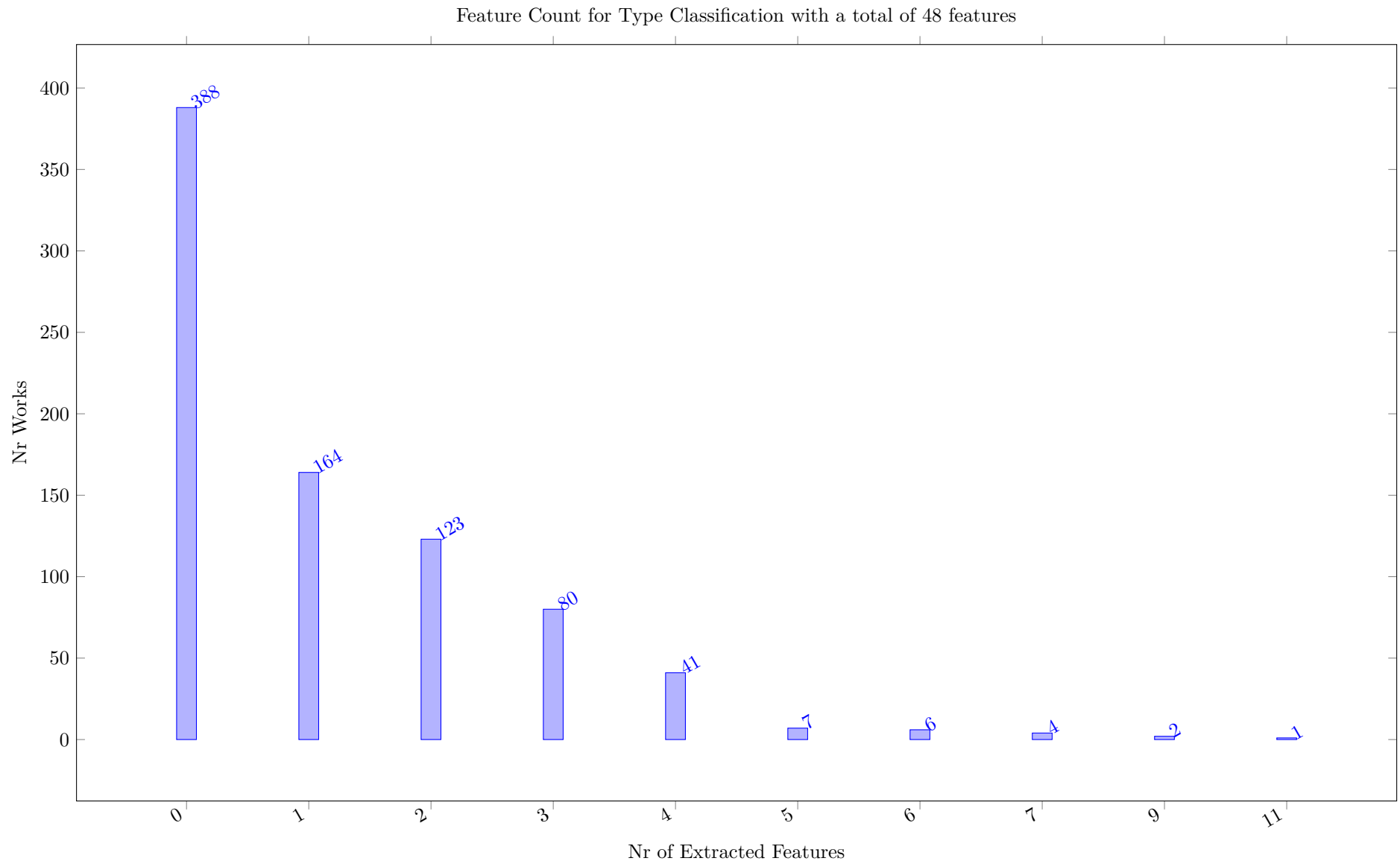
For each concept type, we count how many features are extracted by the individual works that do have a local copy, e.g. for which we can extract features. We can compare the number of features extracted to the number of concepts of a given type, which is stated in the title of the diagram.

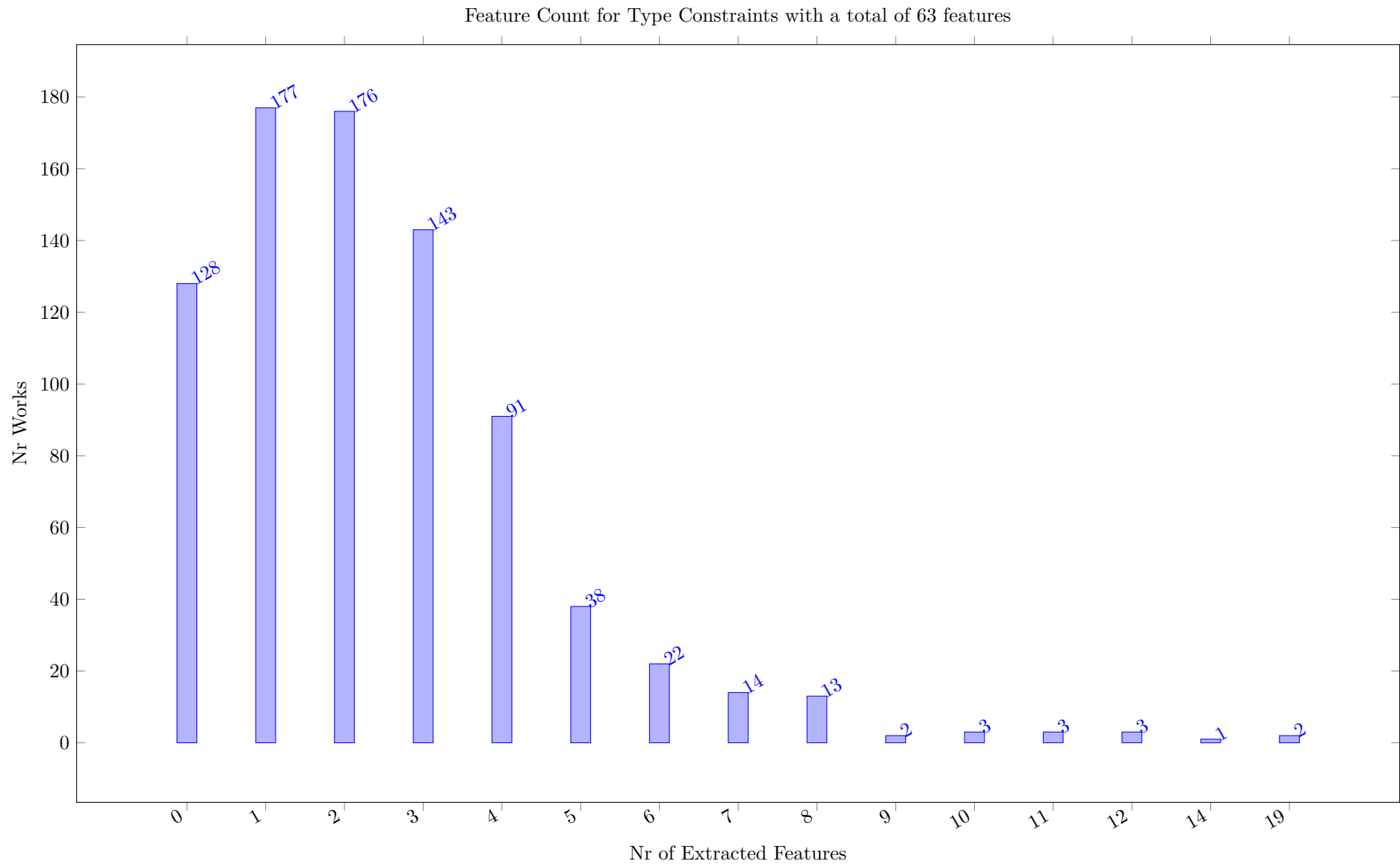
A high count indicates that a work covers many of the concepts of the given type, a low count might mean that our ontology does not have relevant concepts for that work.



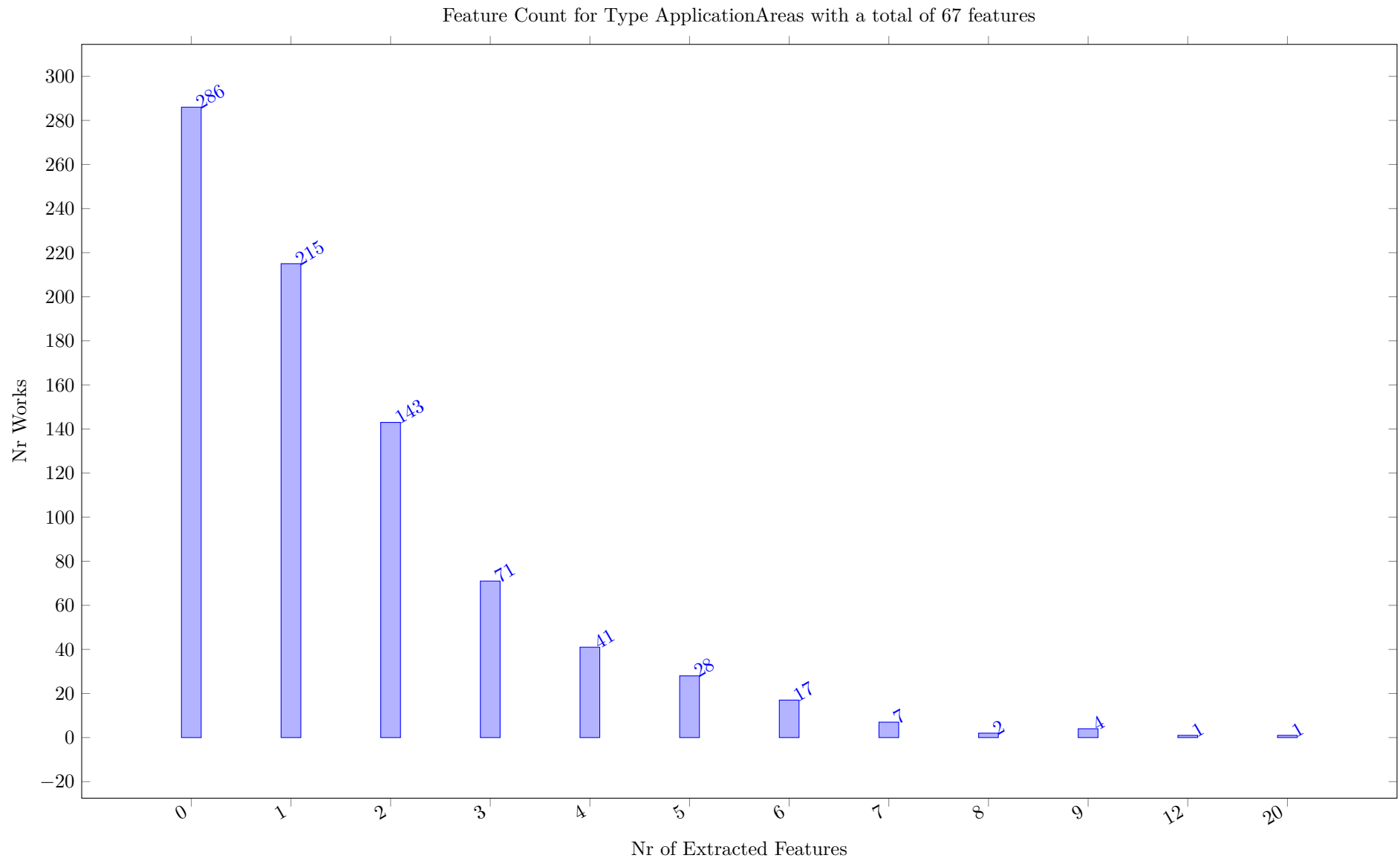


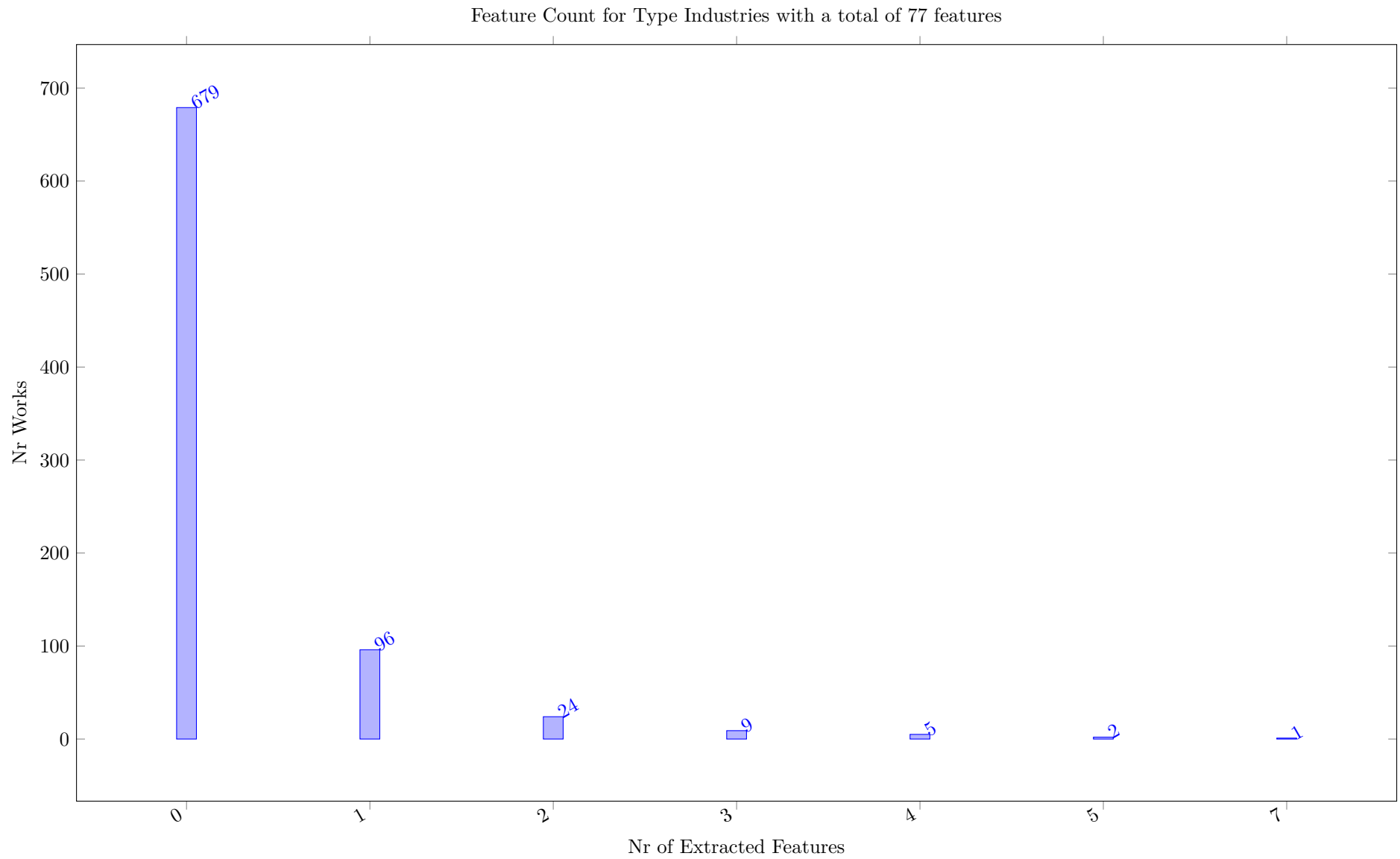


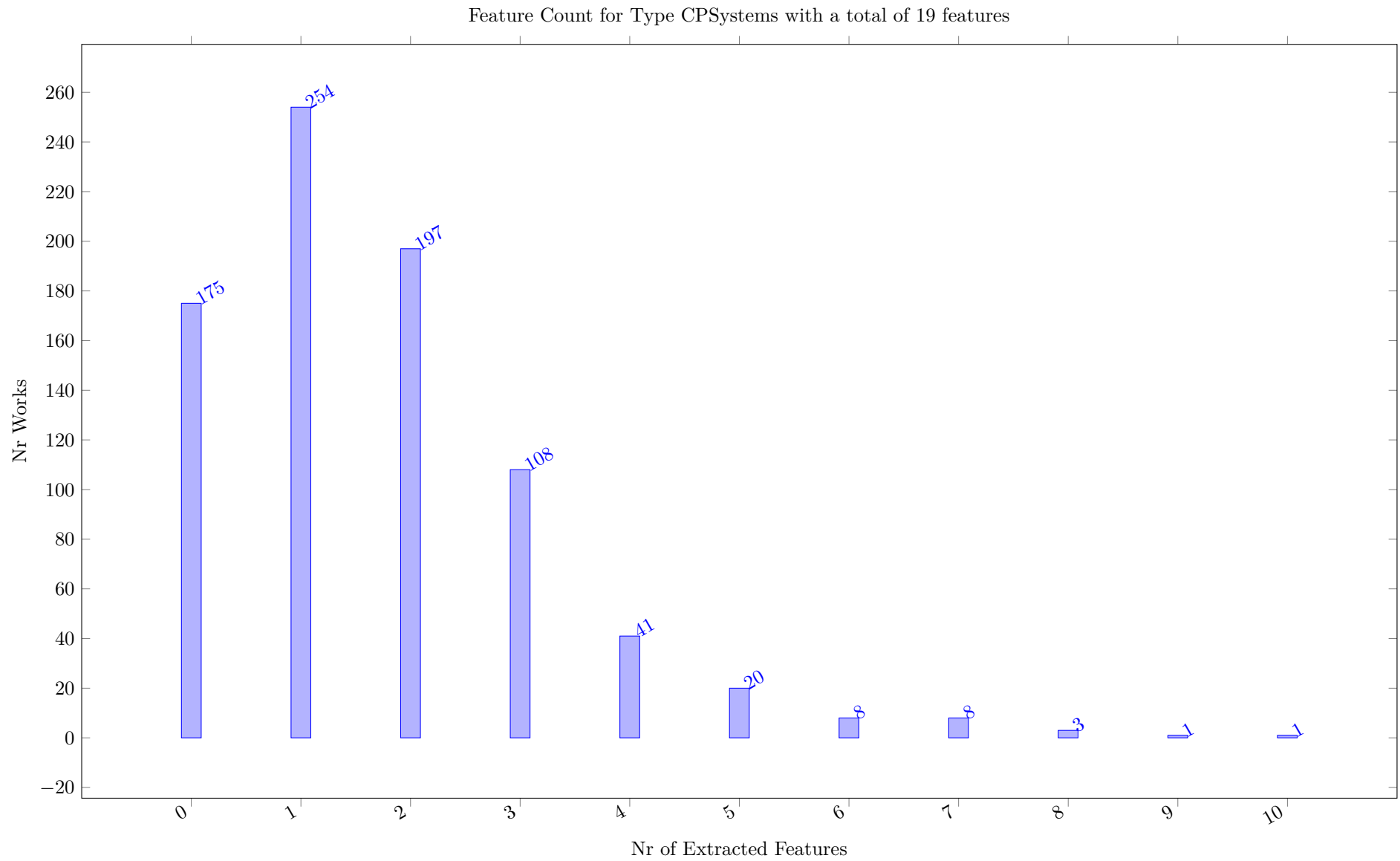


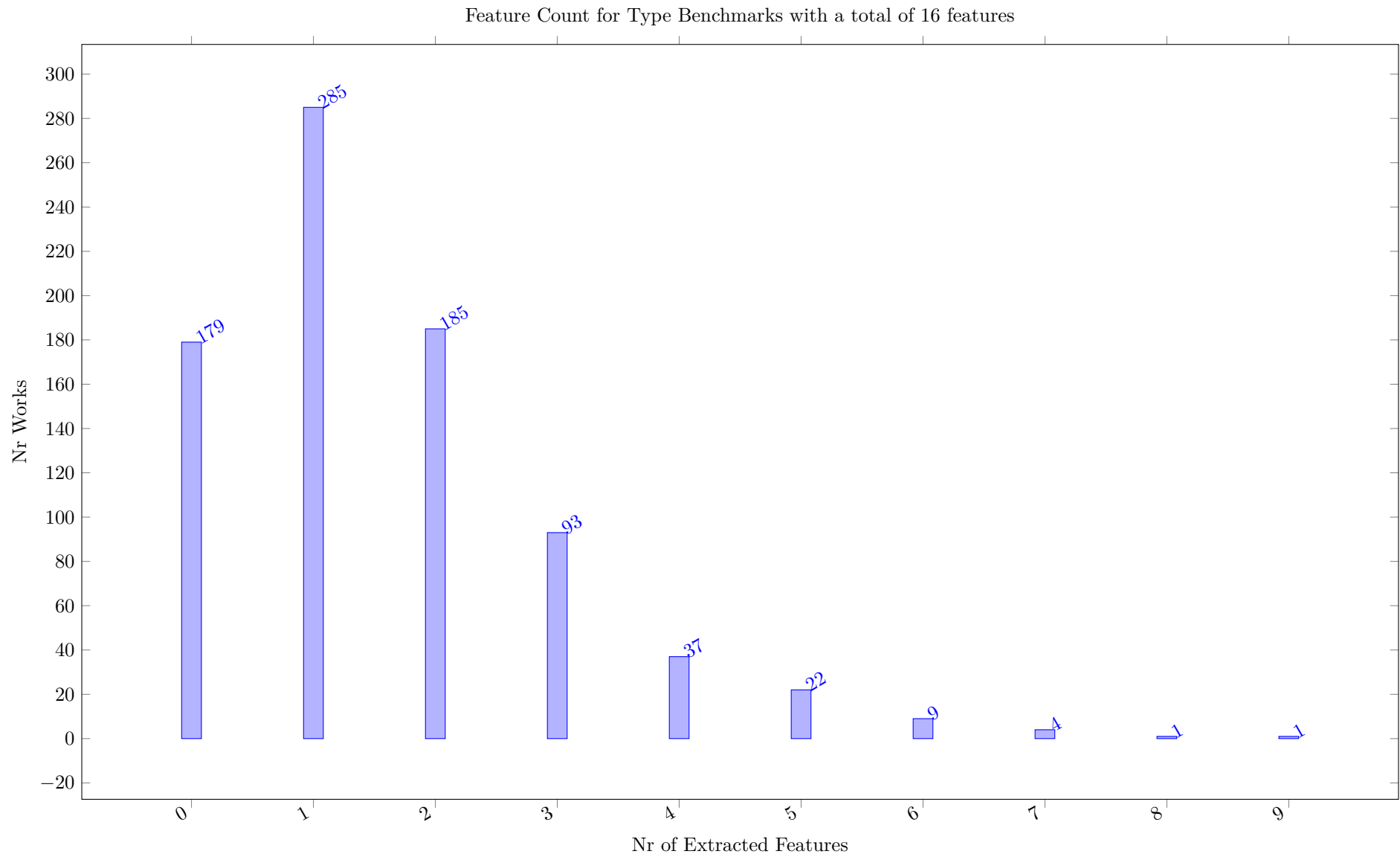


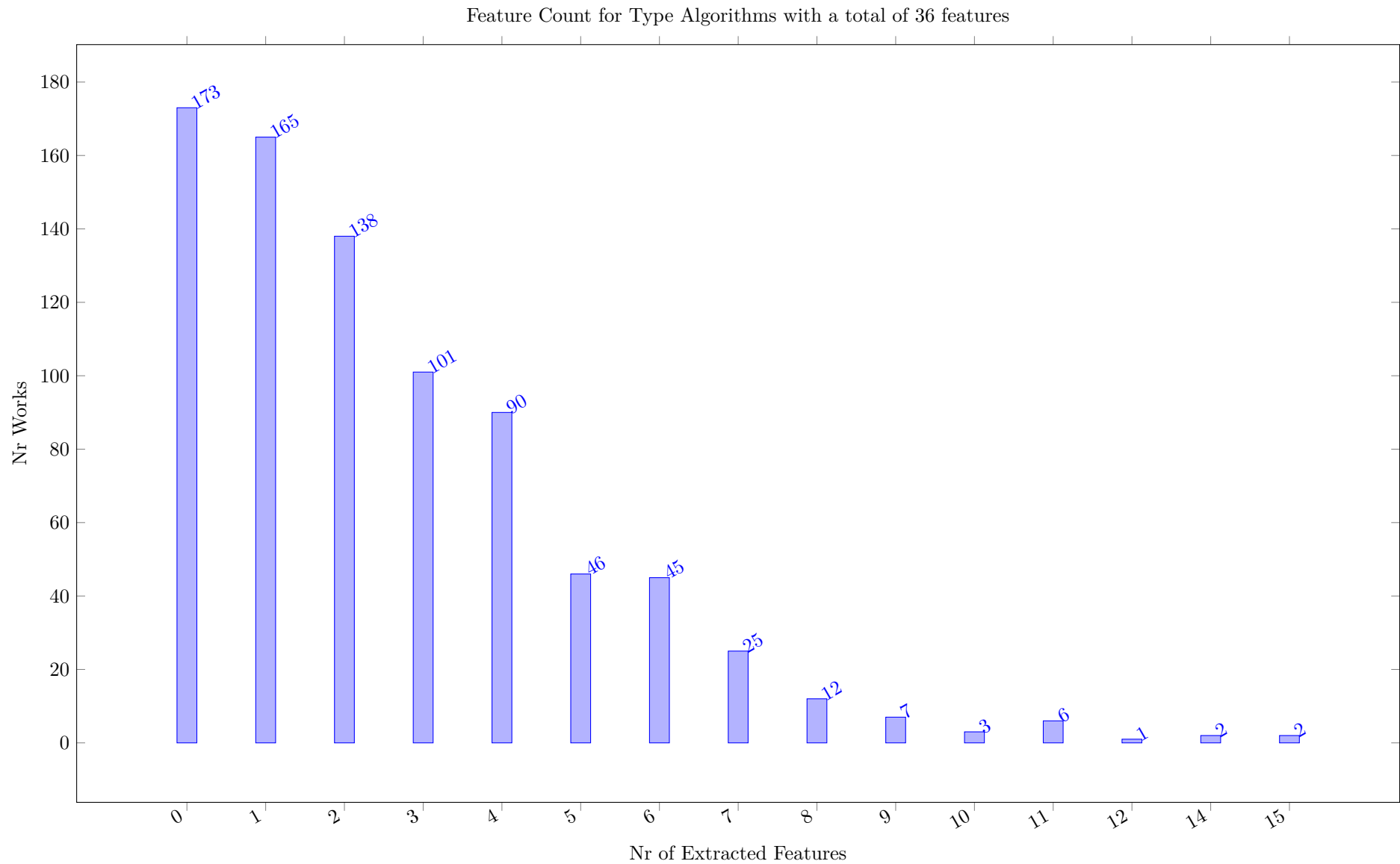










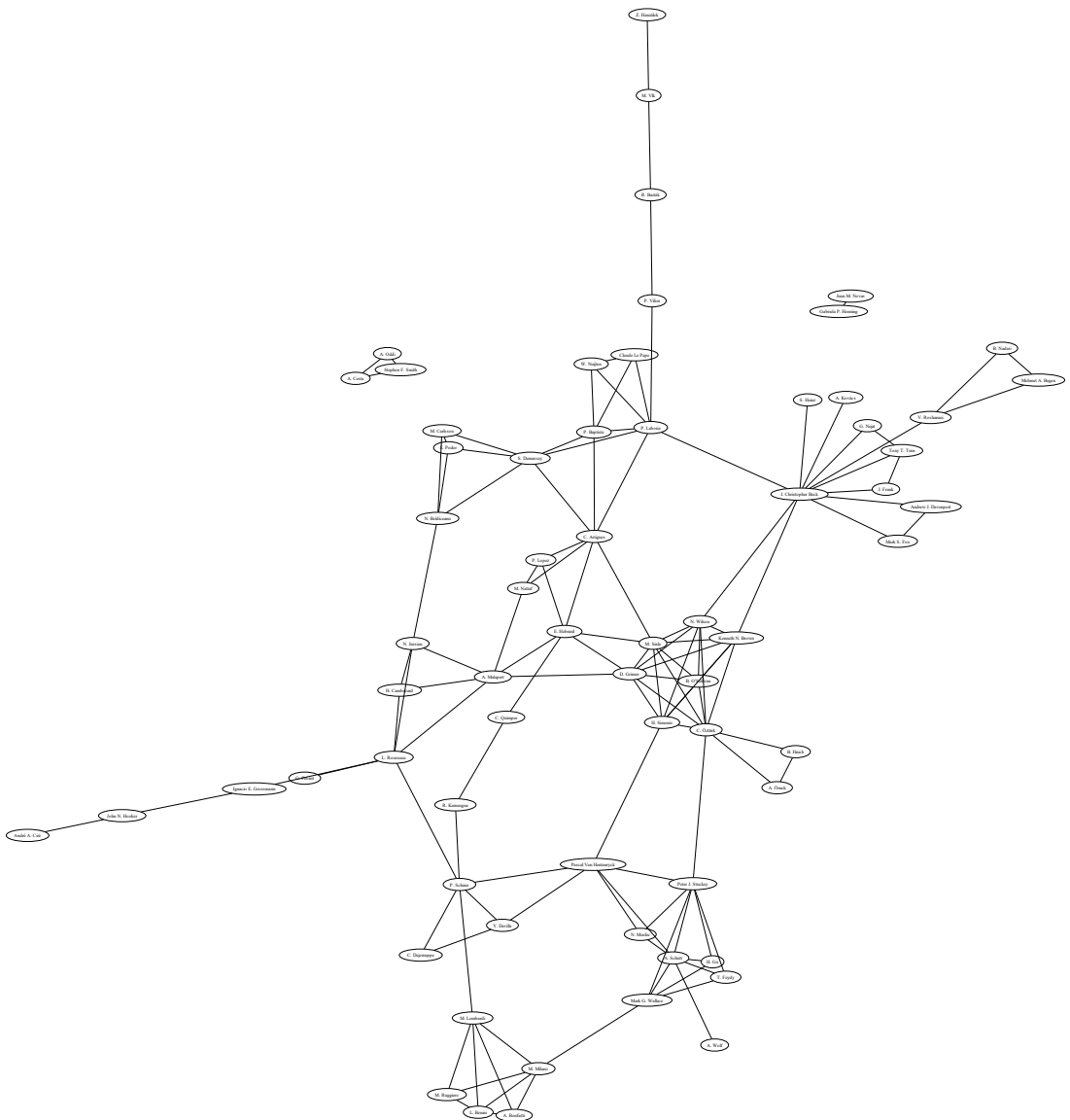


## 13 Coauthor graph

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 are not shown, to avoid a cluttered view. Note that this analysis depends on the use of canonical forms of author names. If bib entries come from any different sources, we will need to check this manually. DBLP seems to be using ORCID values and typically identifies the authors of a work with a canonical representation of their name. Accents and umlauts are other sources of having multiple forms of the name of the same author. Note that the risk of two different authors using the same name should be low for very specific literature surveys, but cannot be checked with the data sources currently used.

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

Figure 1: Coauthor Graph Drawn with fdp (Graphviz)

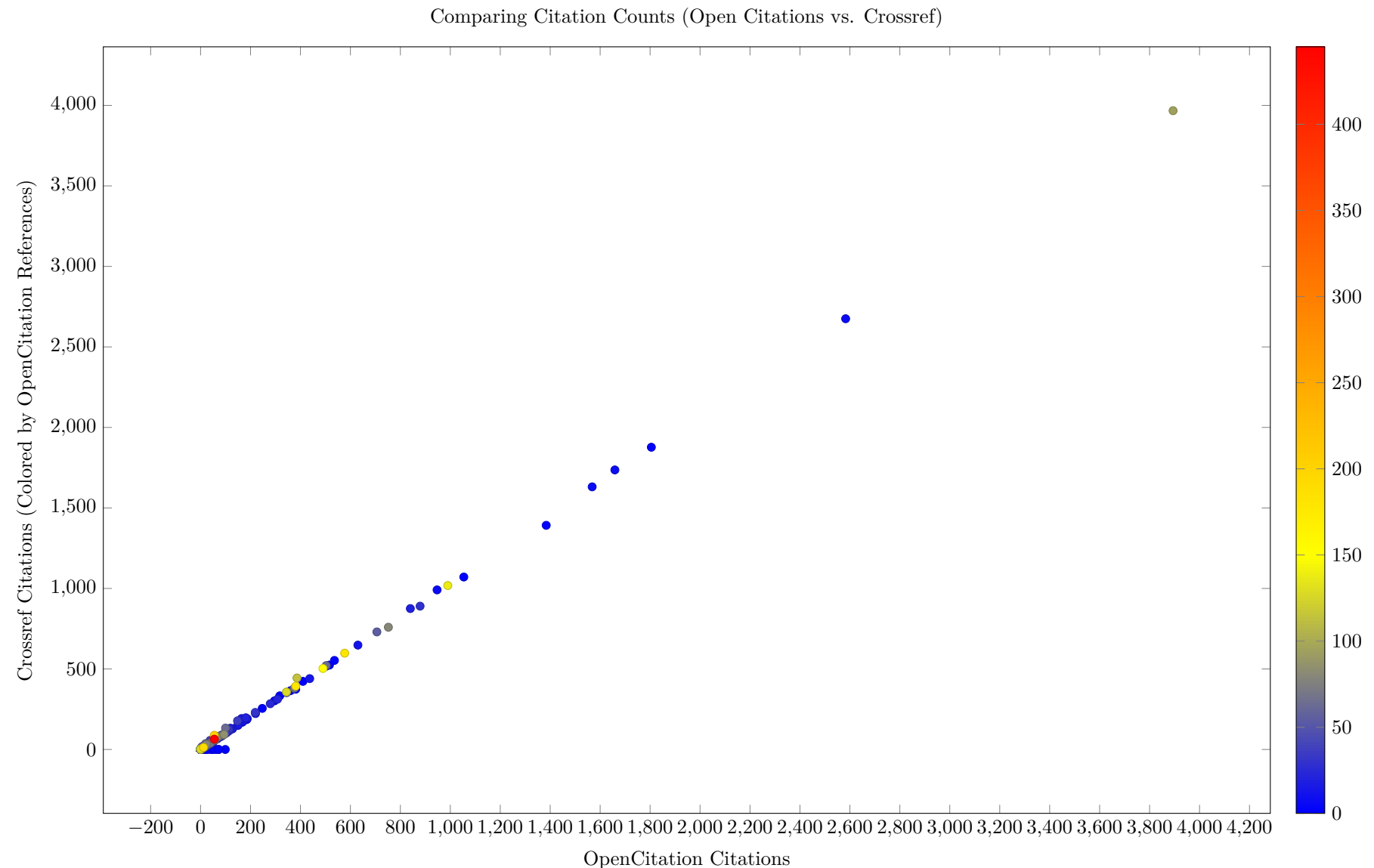


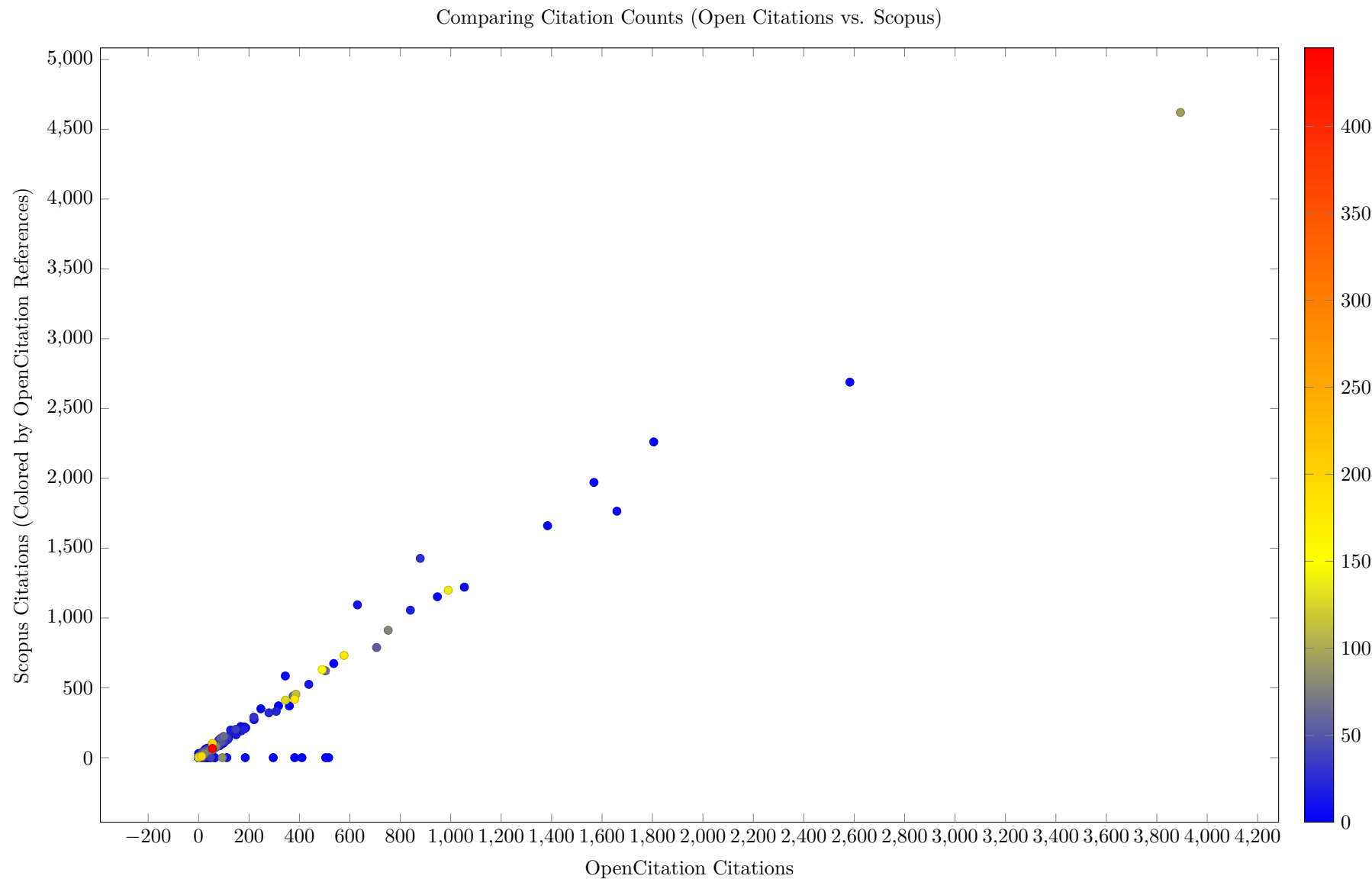


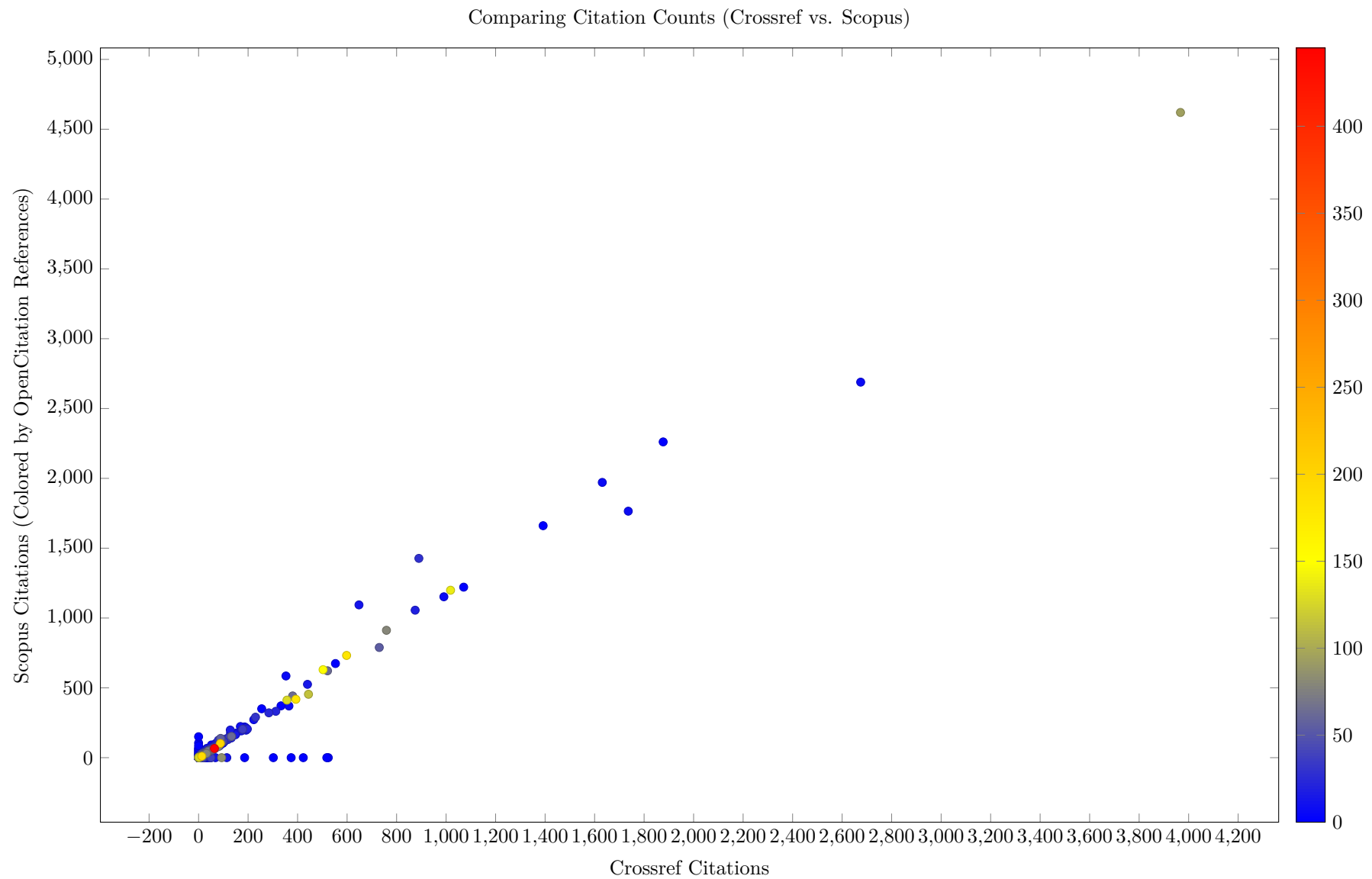


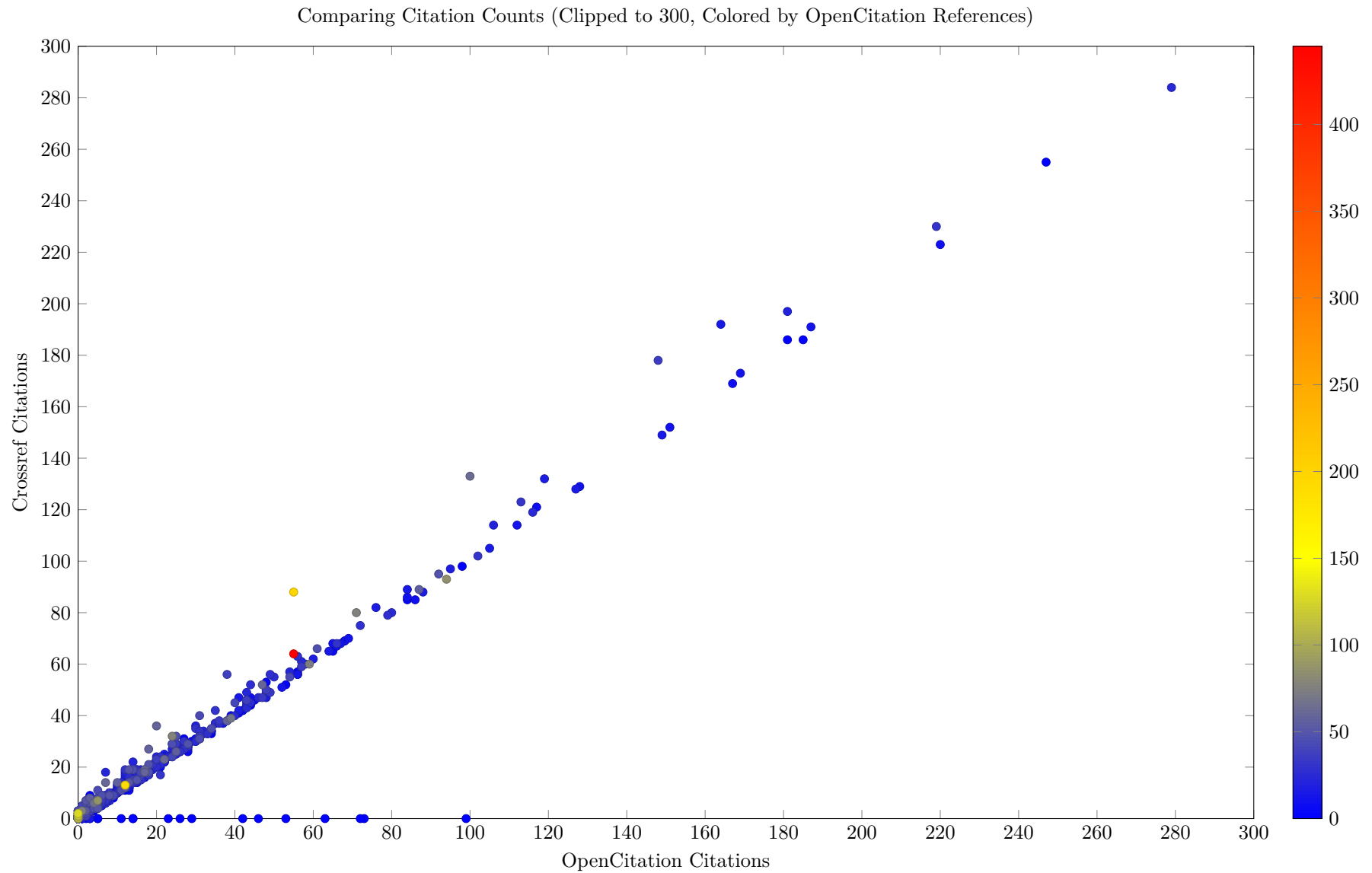
## 14 OpenCitations vs. Crossref Data vs. Scopus Data

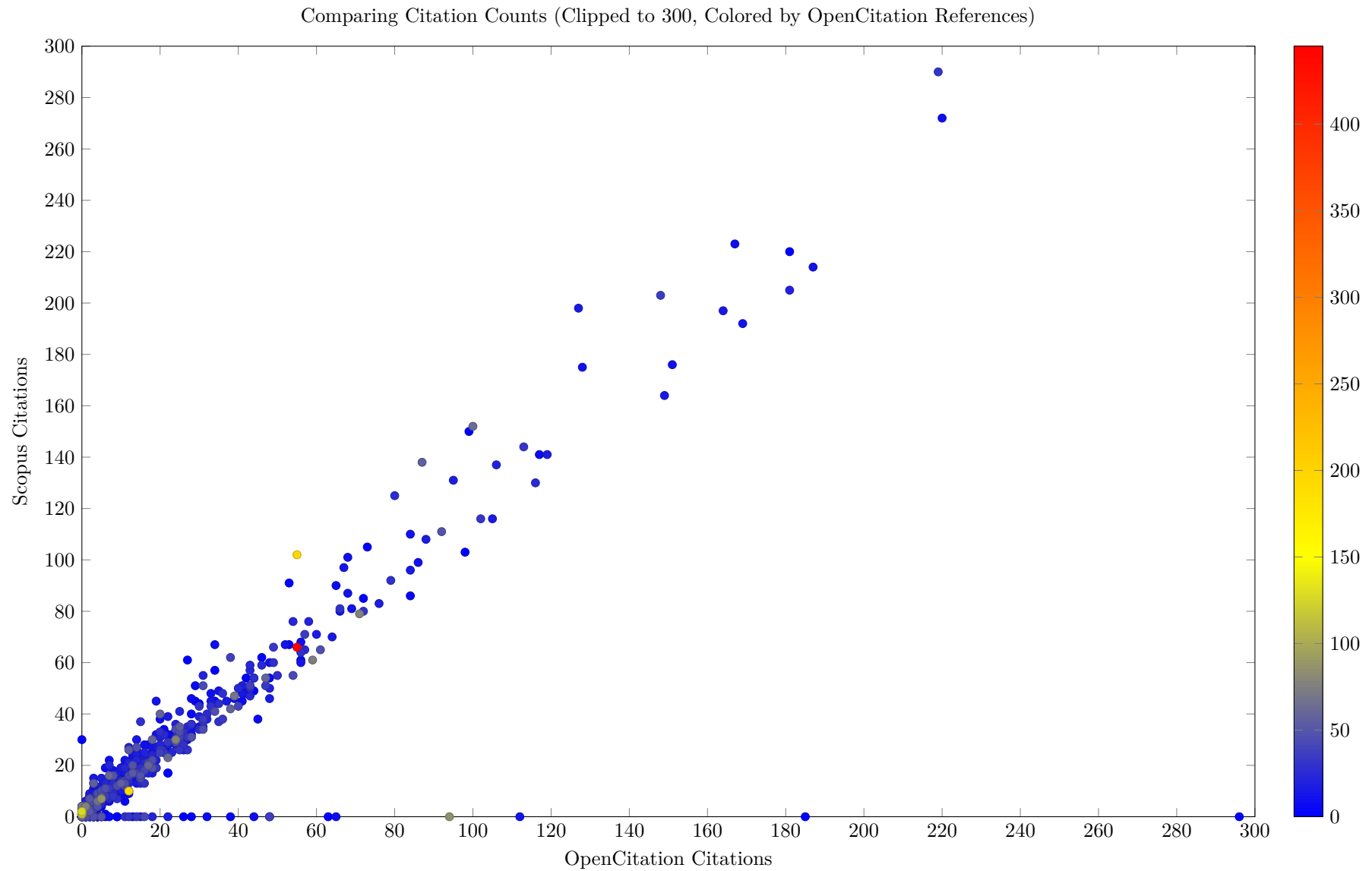
### 14.1 Citation Comparison

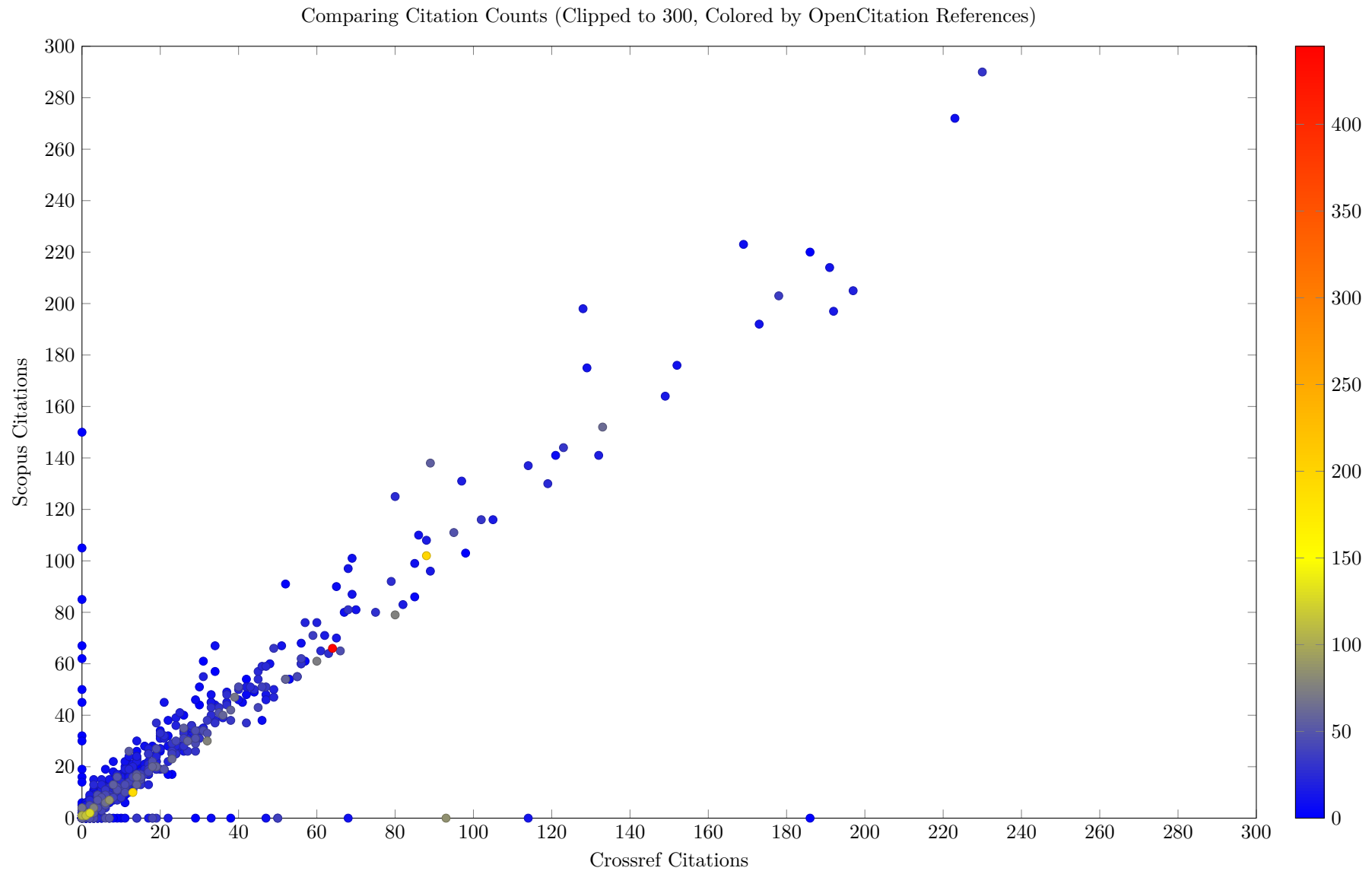






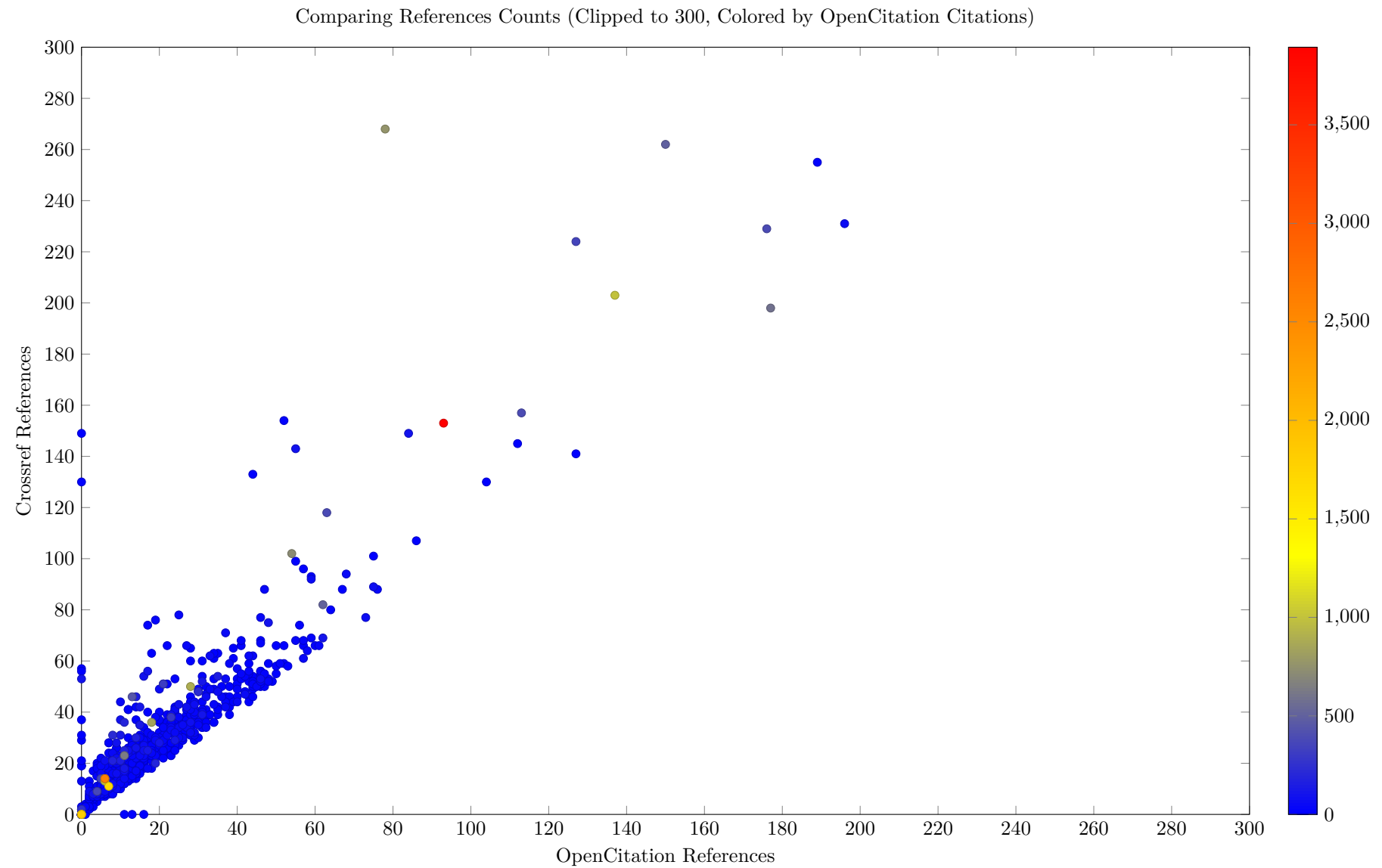








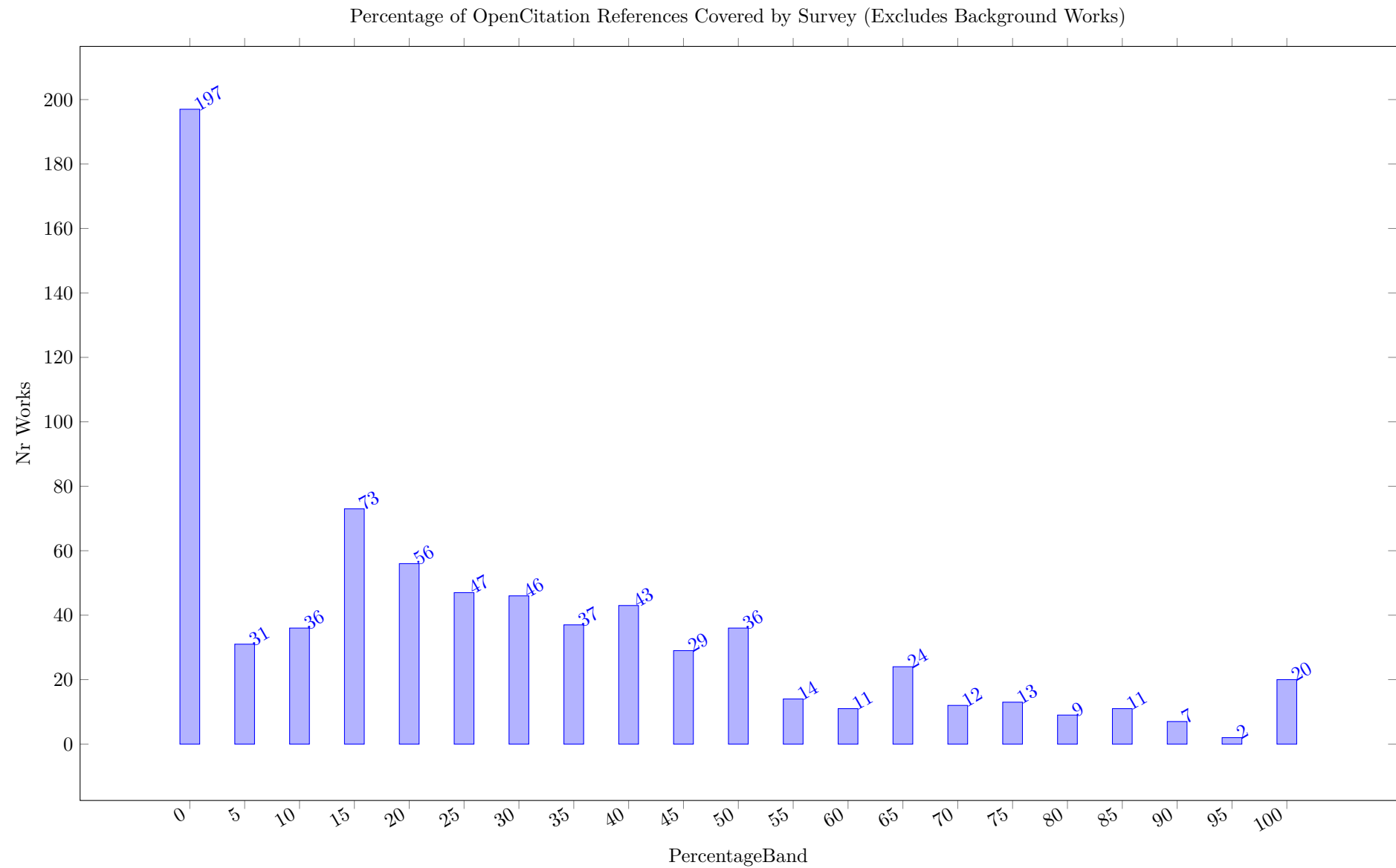
## 14.2 References Comparison

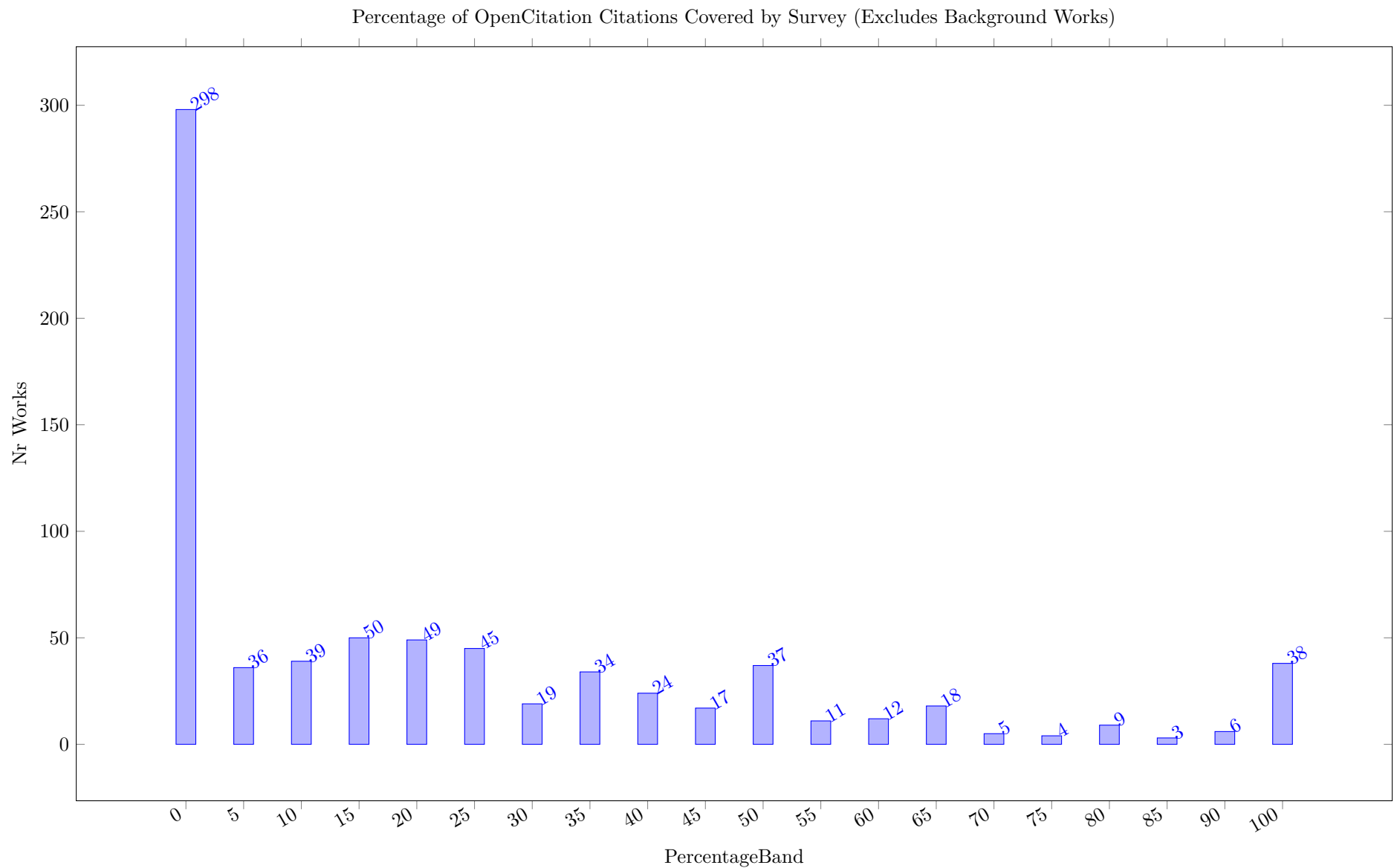


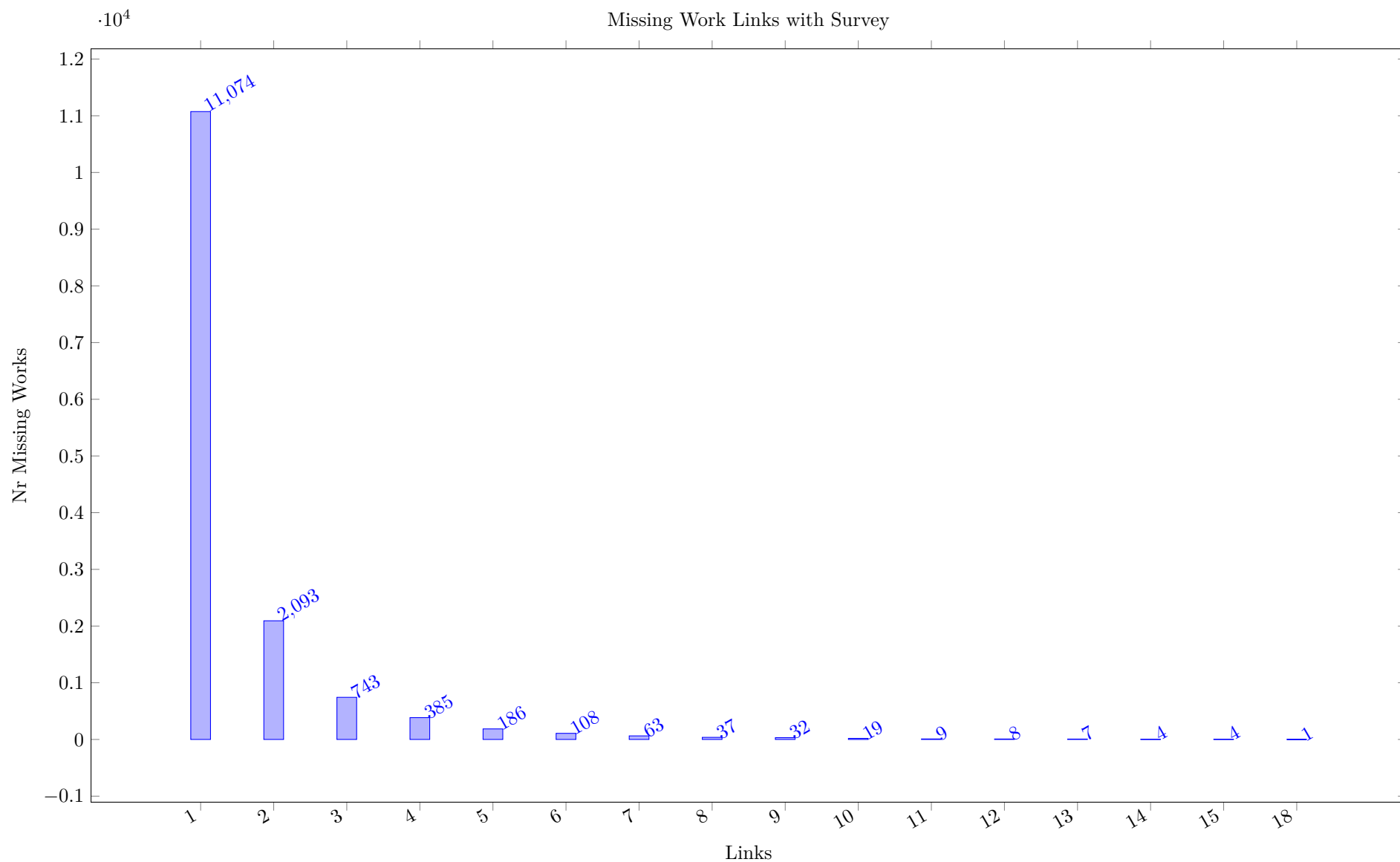




### 14.3 Percentage Cover







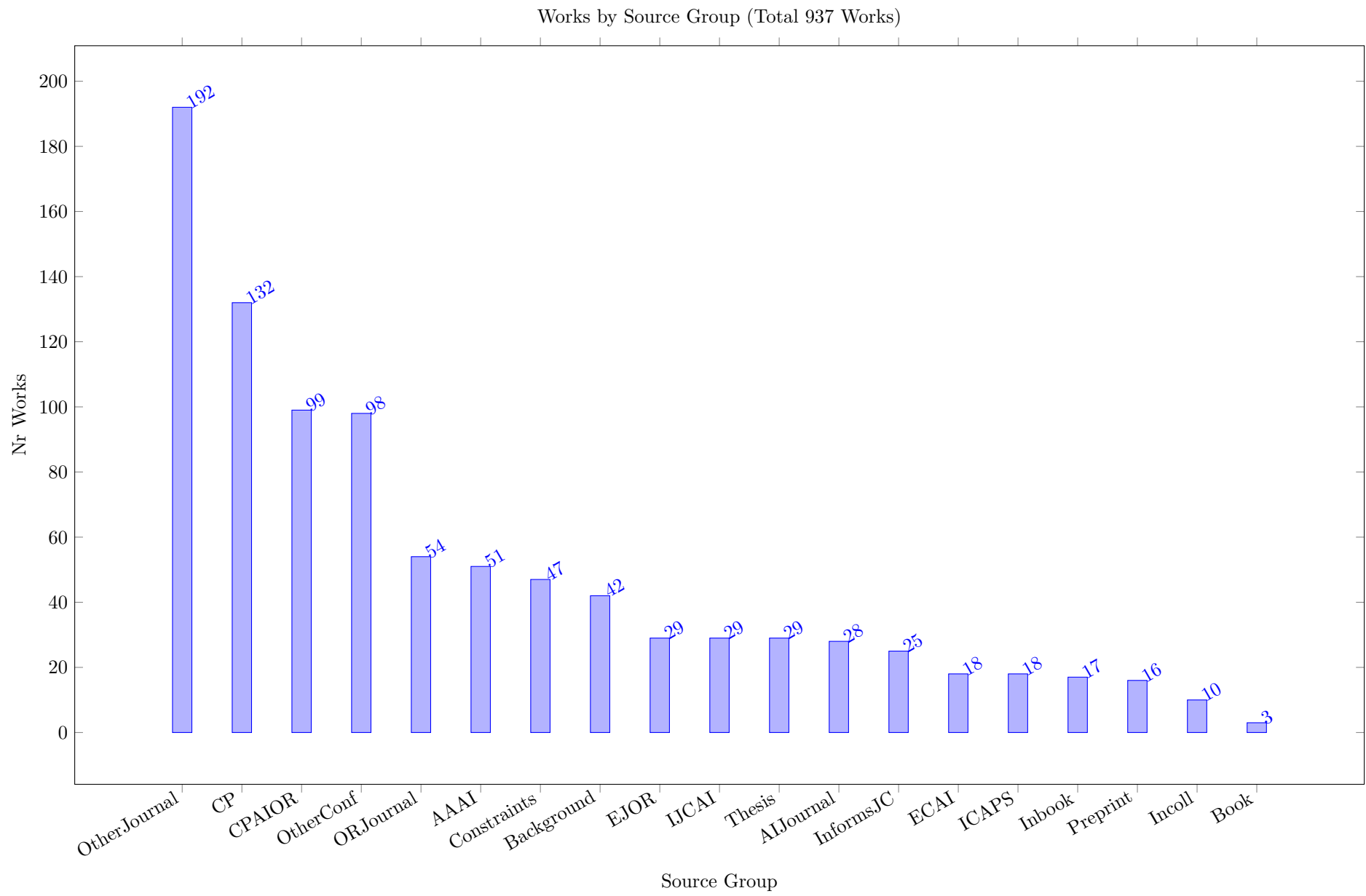
## 15 Citations by Year and Source Group

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 11: Source Groups

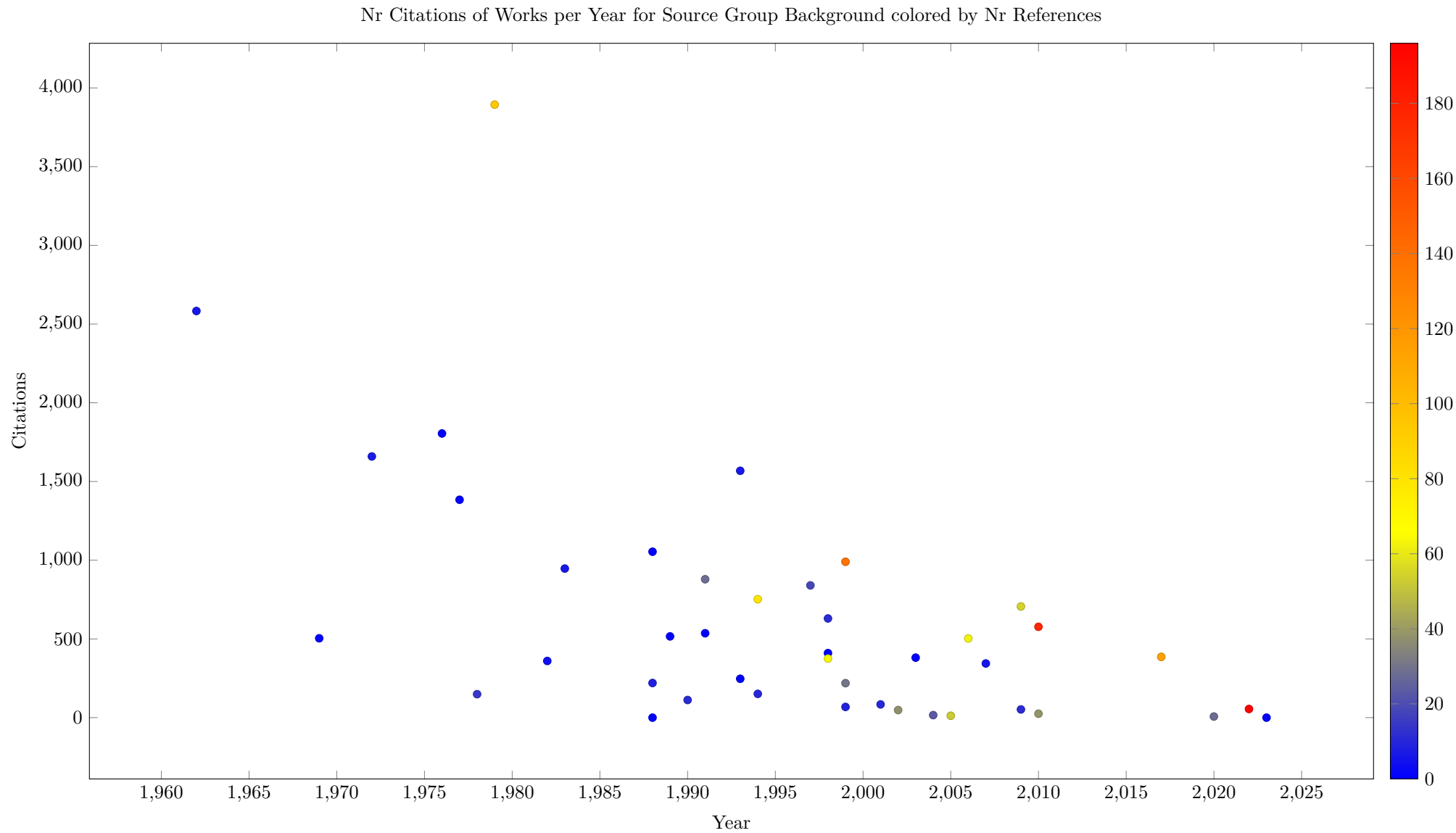
Name	Description
Background	Background material
CP	The CP conference (from 1995)
CPAIOR	The CPAIOR conference (starting 2004)
ICAPS	The ICAPS conference
AAAI	AAAI conference
IJCAI	IJCAI Conference
ECAI	ECAI Conference
OtherConf	Any other conference
Constraints	The Constraint Journal
EJOR	The European Journal on Operations Research
InformsJC	The Informs Journal on Computing
AIJournal	Other AI Journals
ORJournal	Other OR Journals
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.

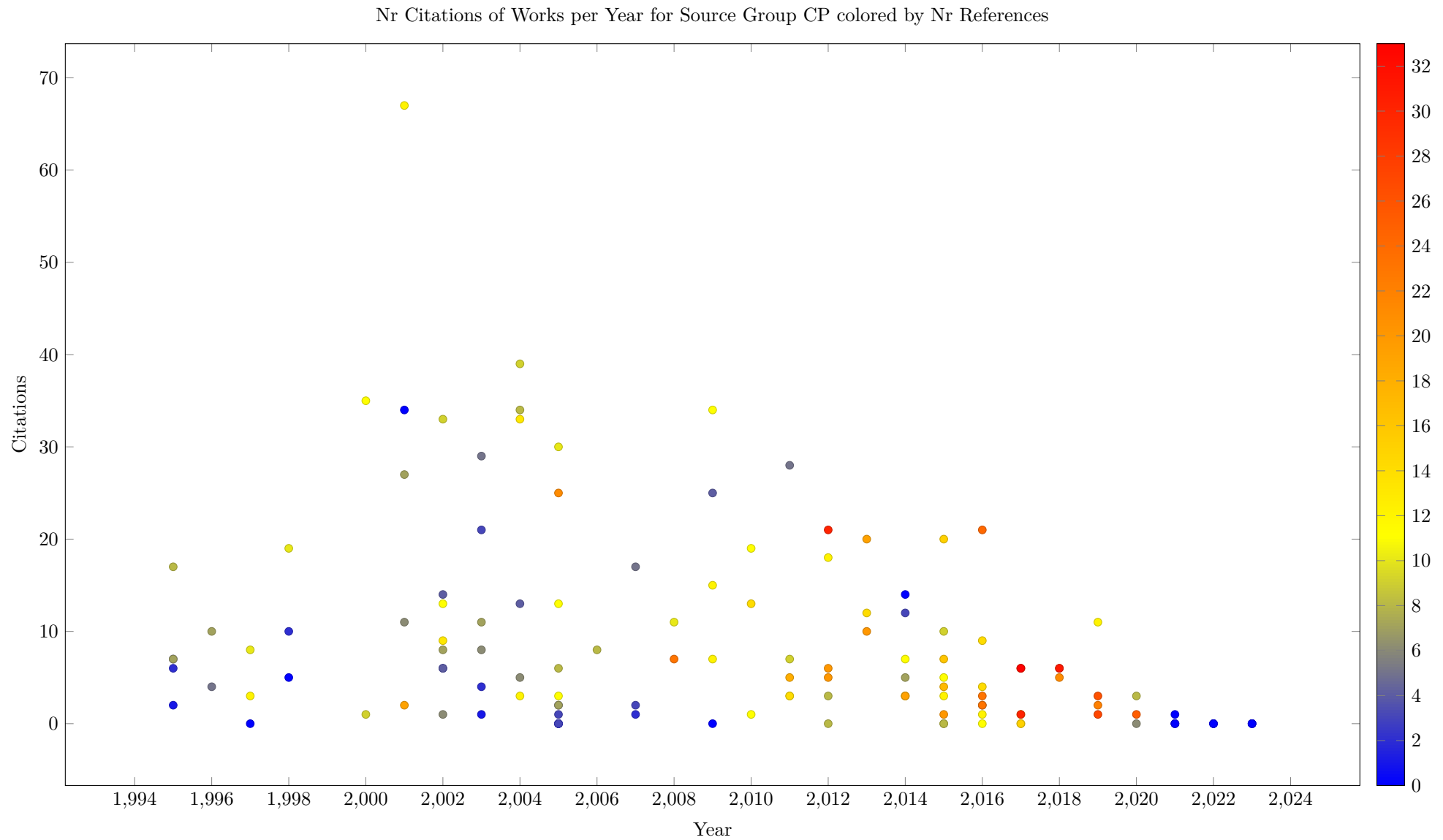


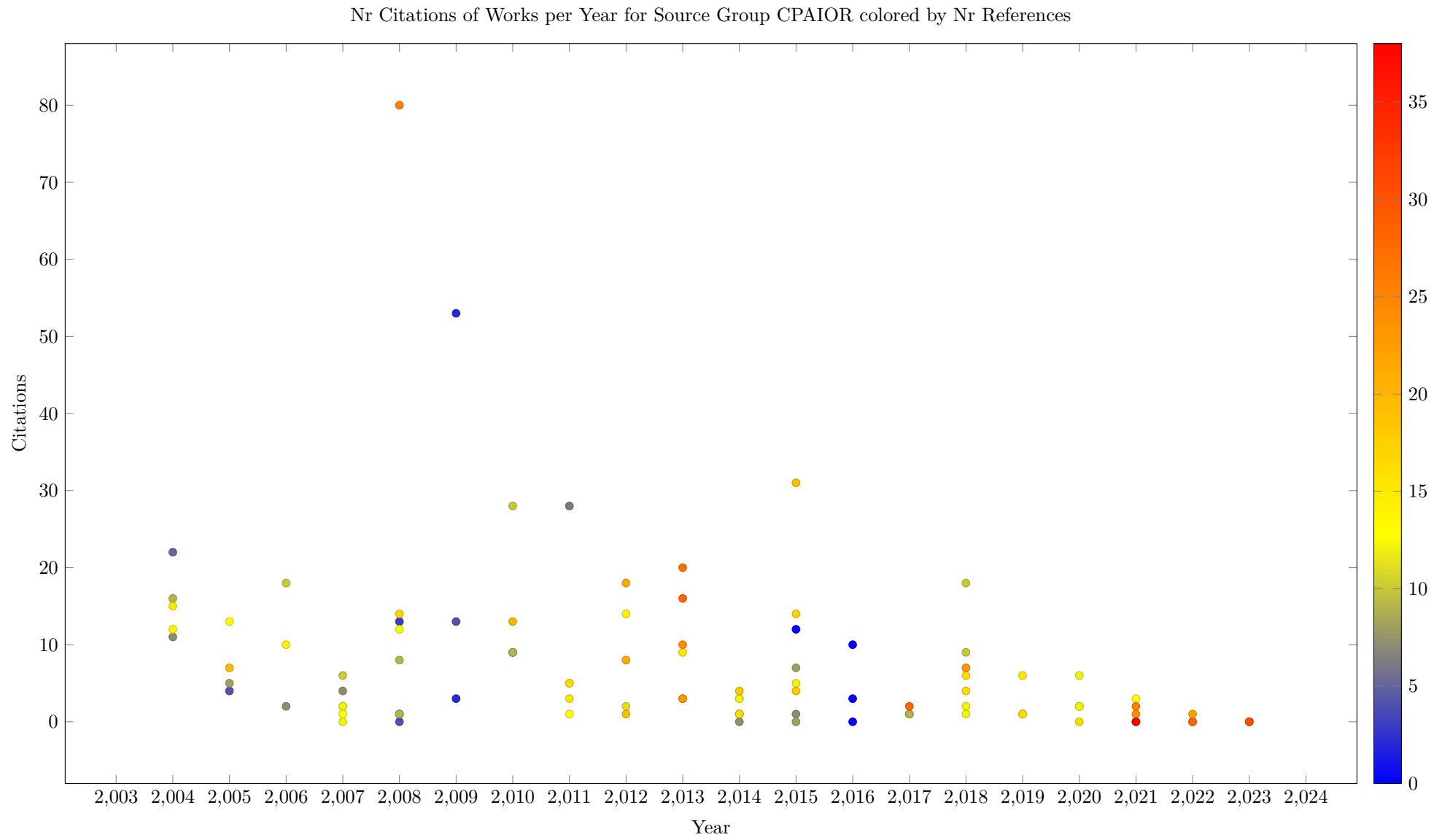
## 15.1 Source Group Citations by Year

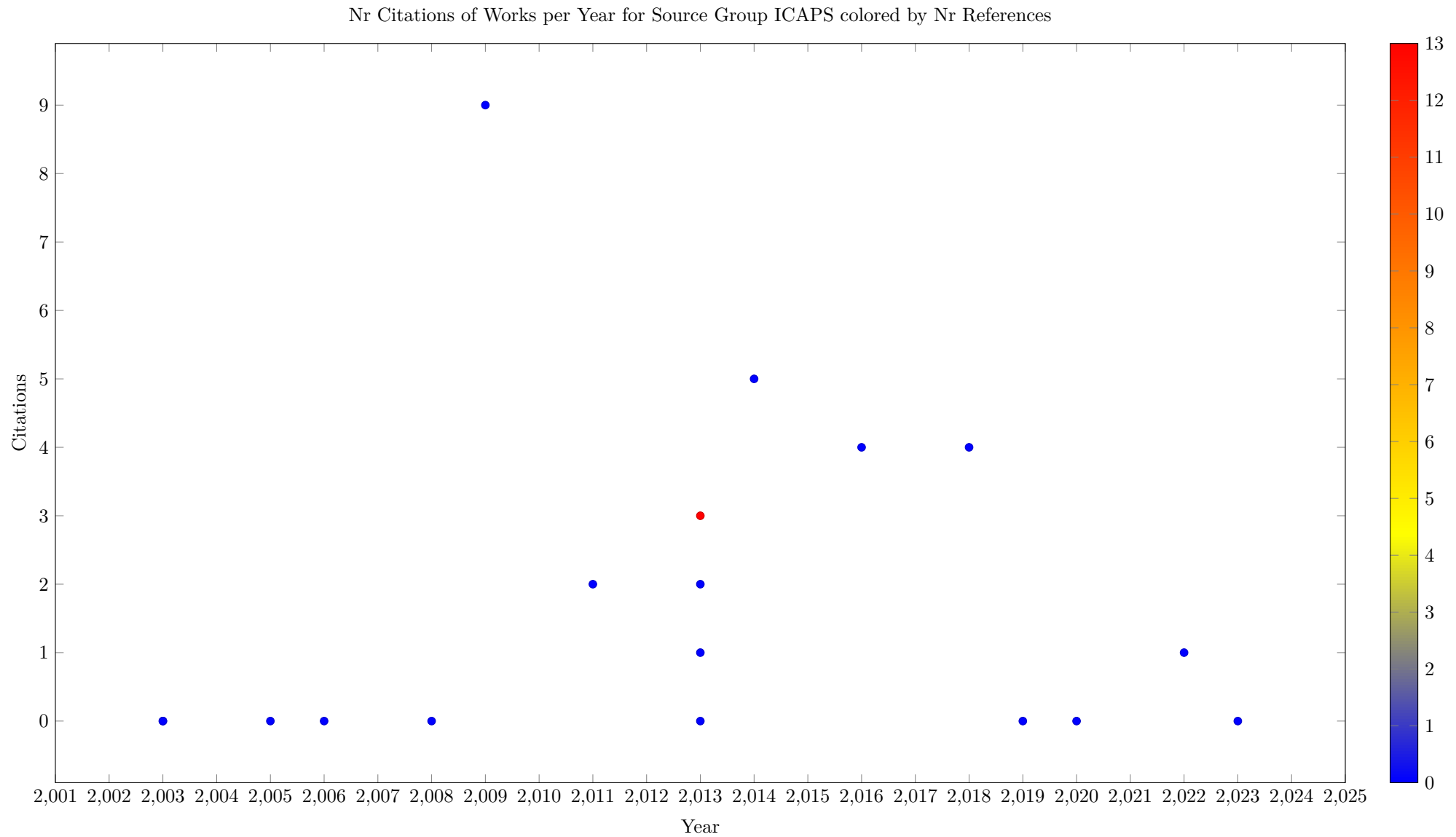
We plot for each source group the number of citations obtained by papers published in a given year. This plot gives both an indication in which period the source group was active, and how significant the works in the source are. It is of course natural that more recent papers have fewer citations than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



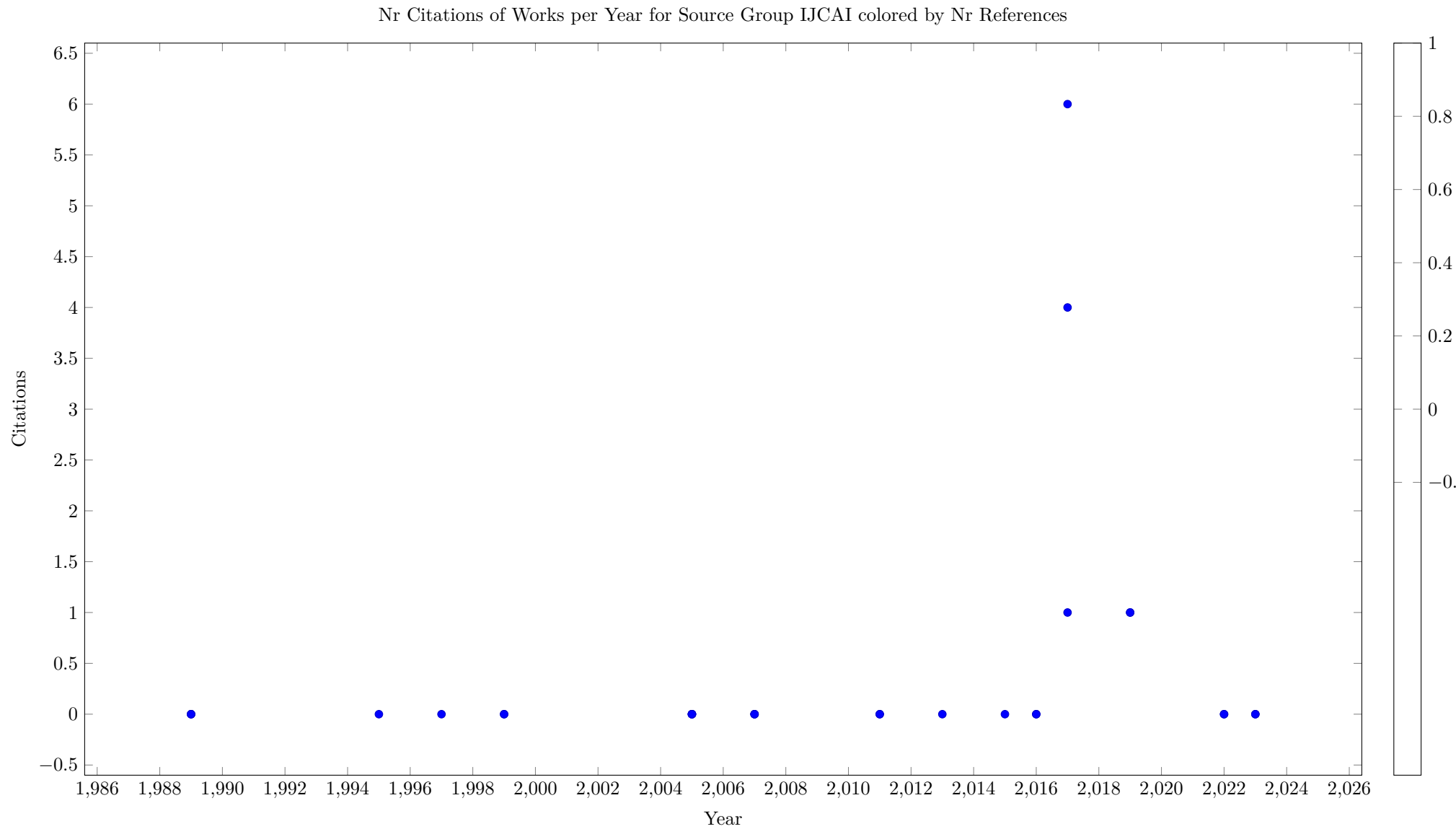


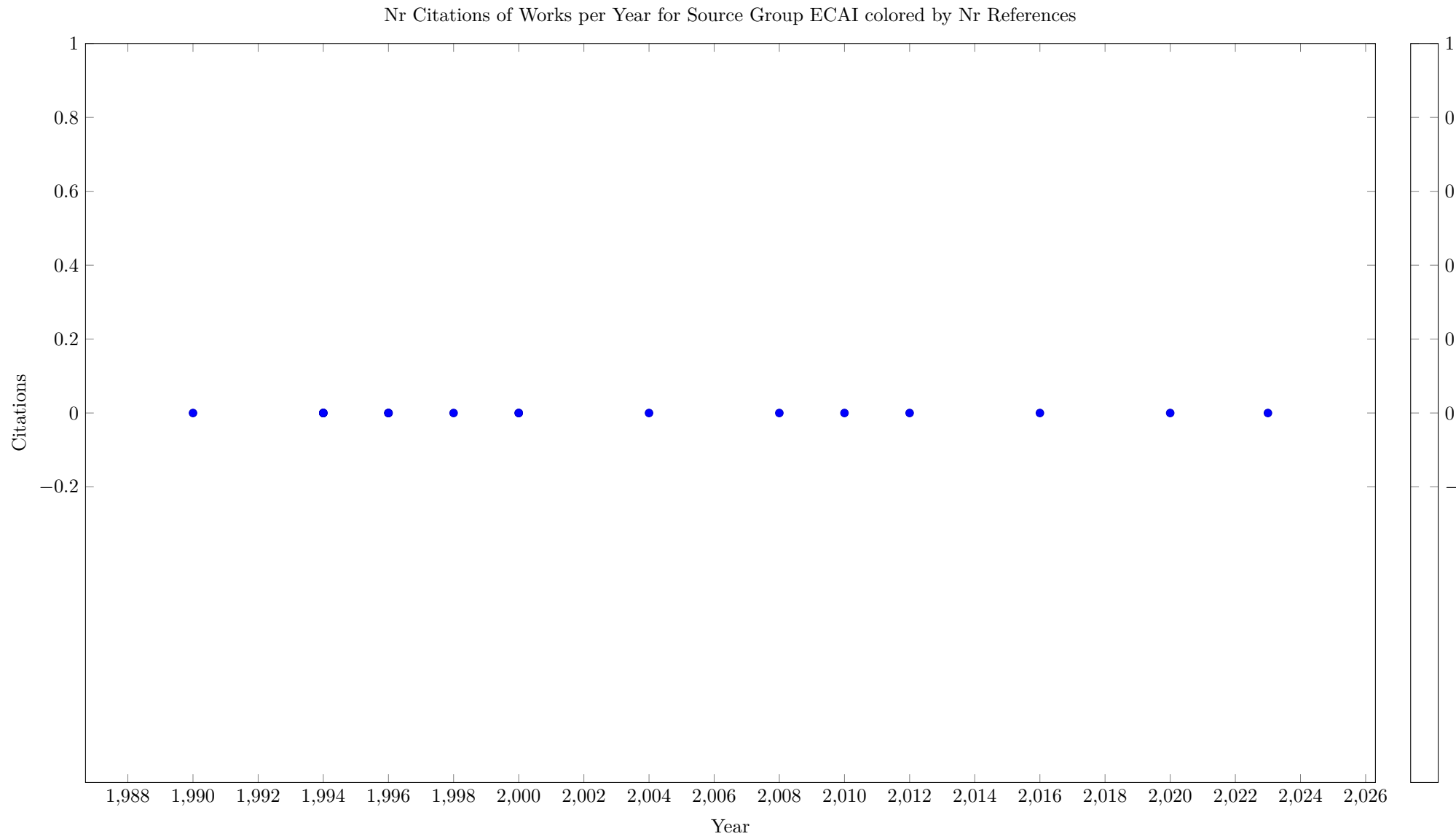


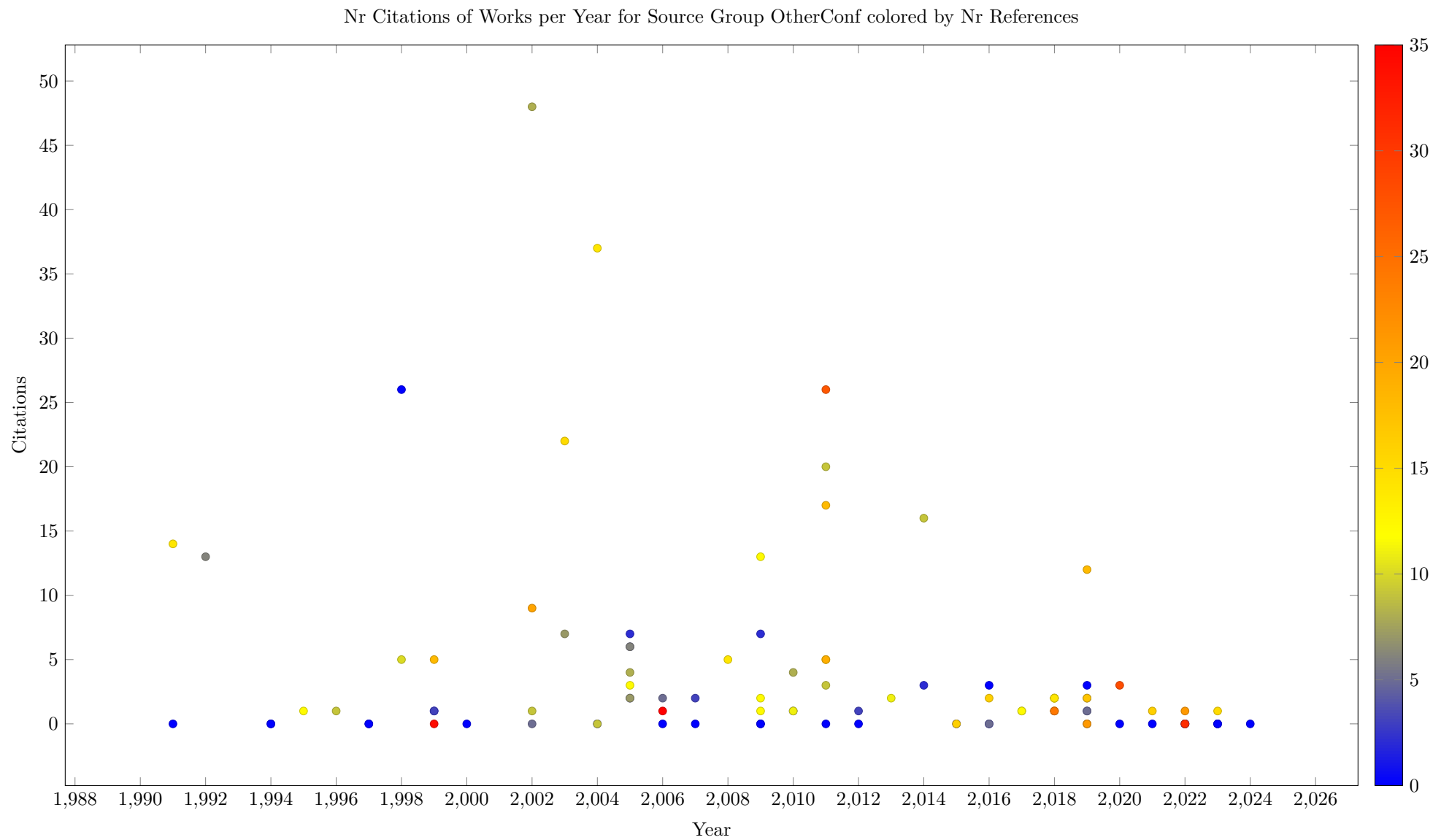


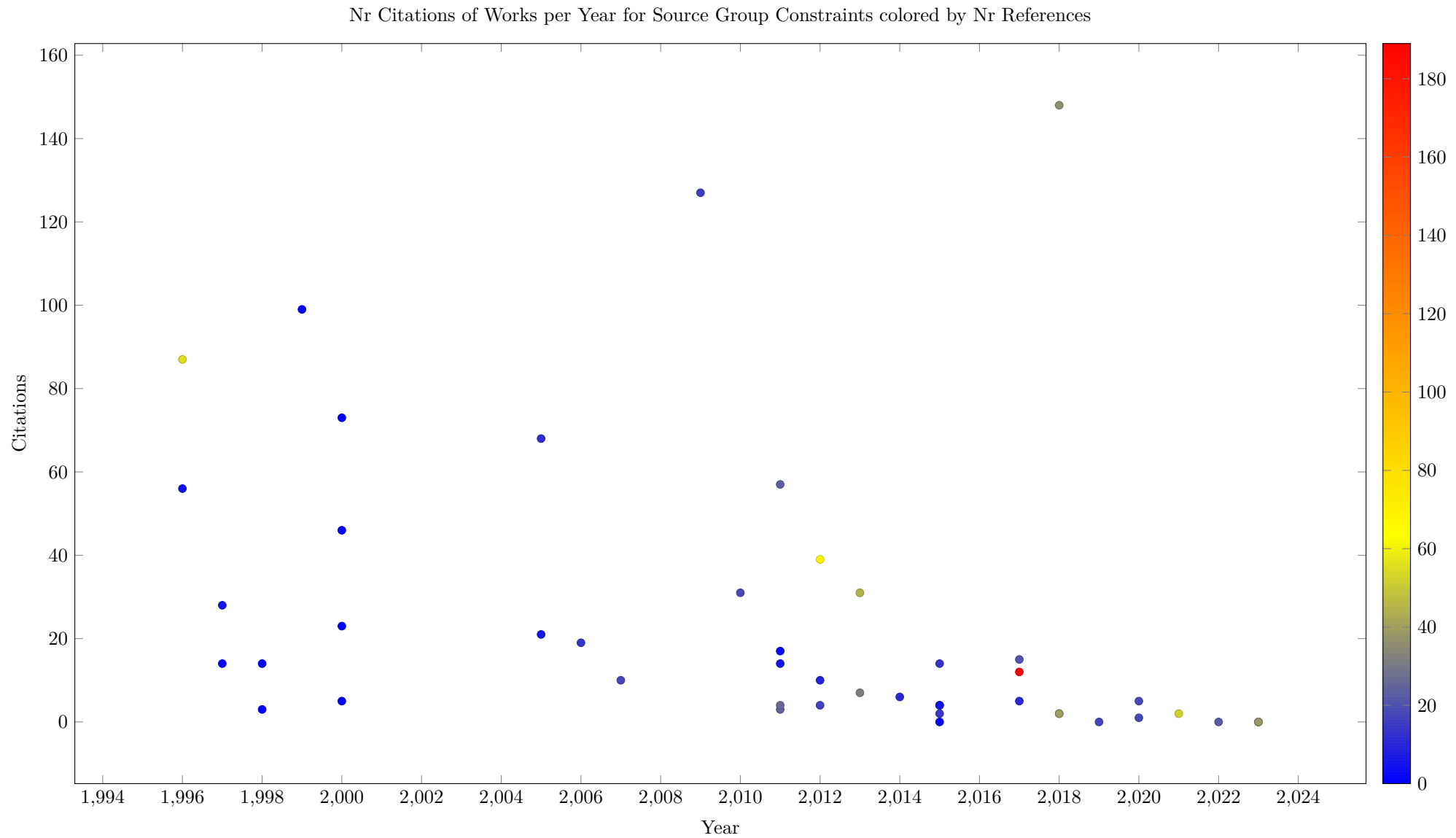




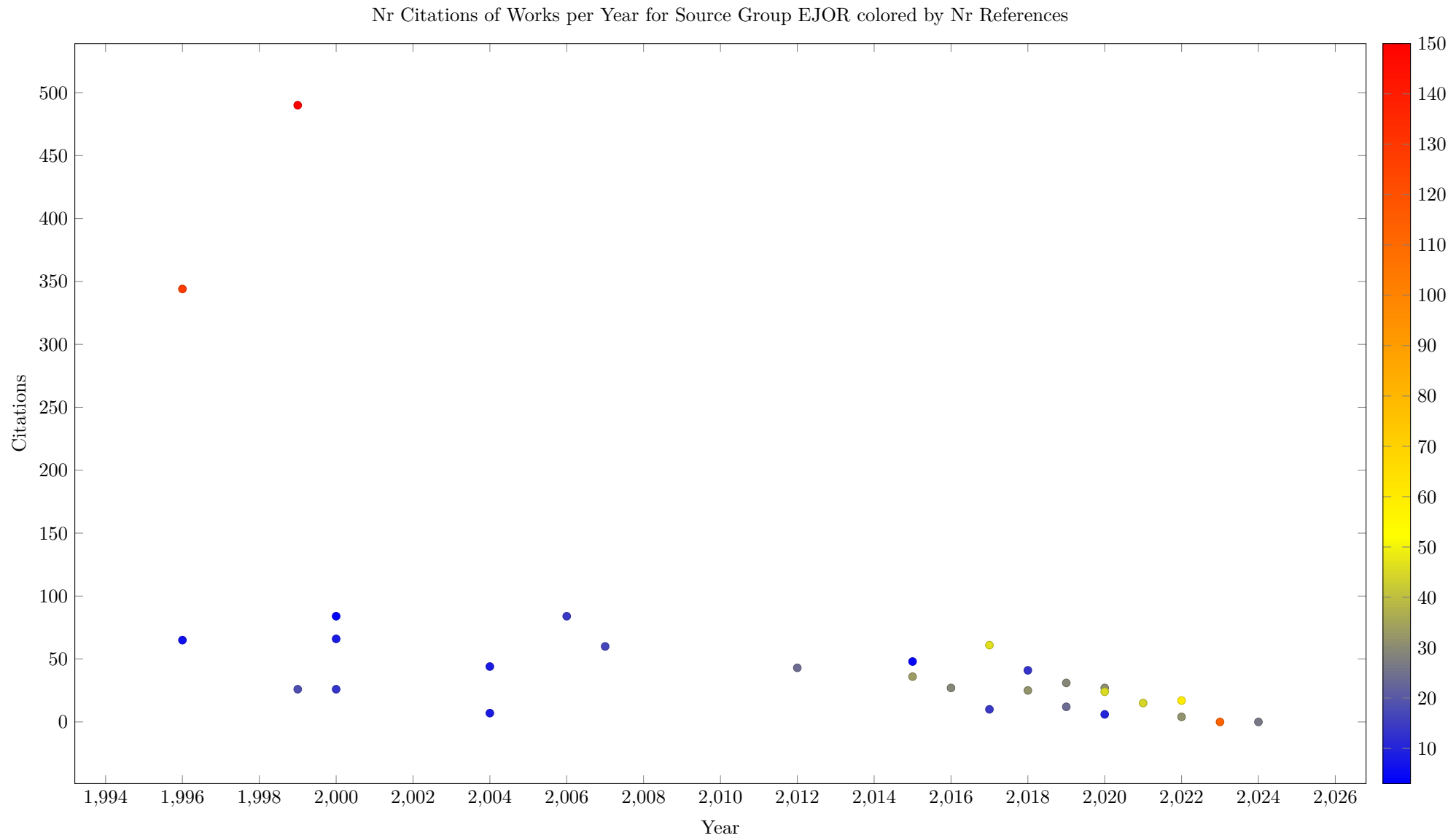


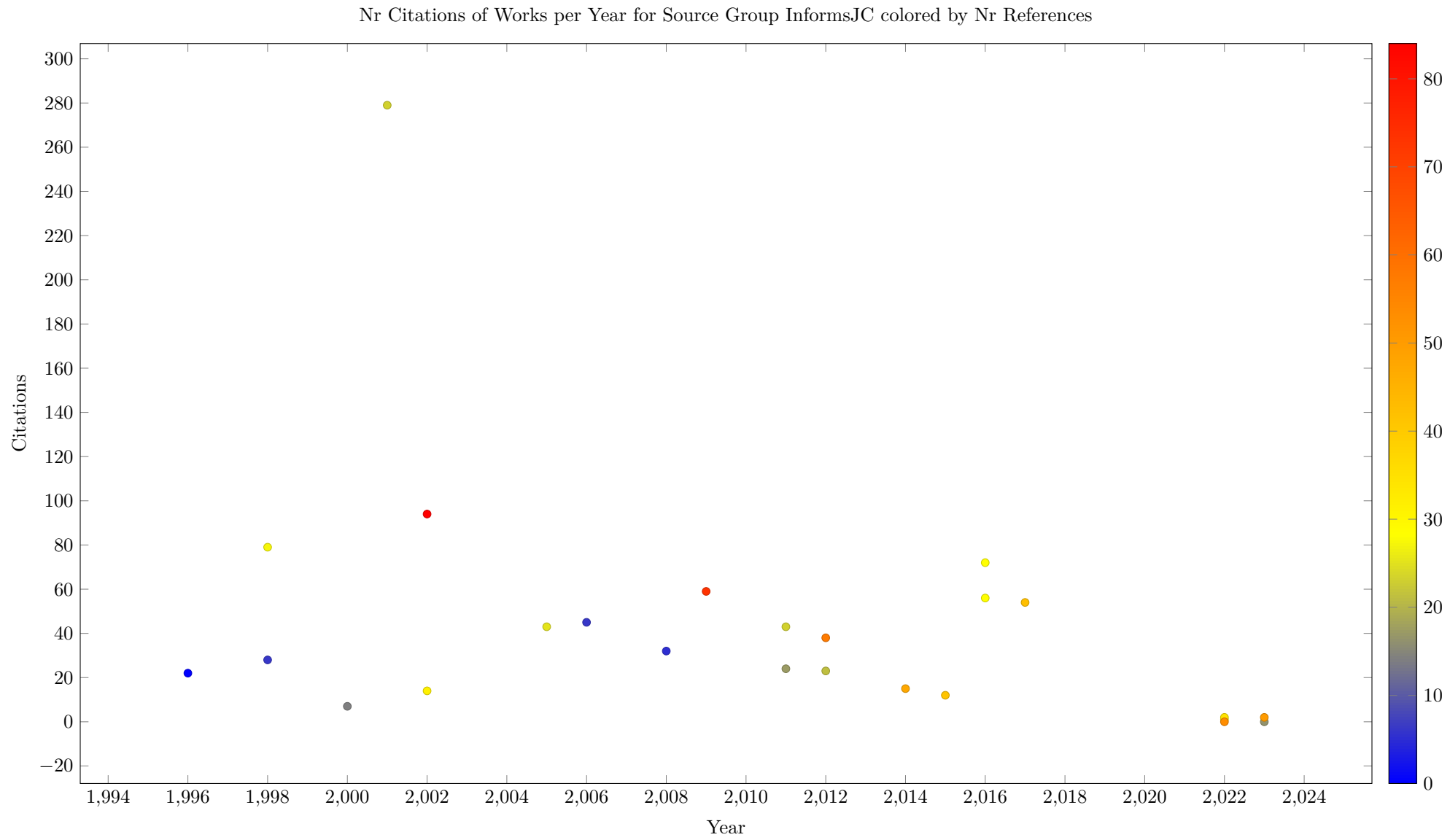


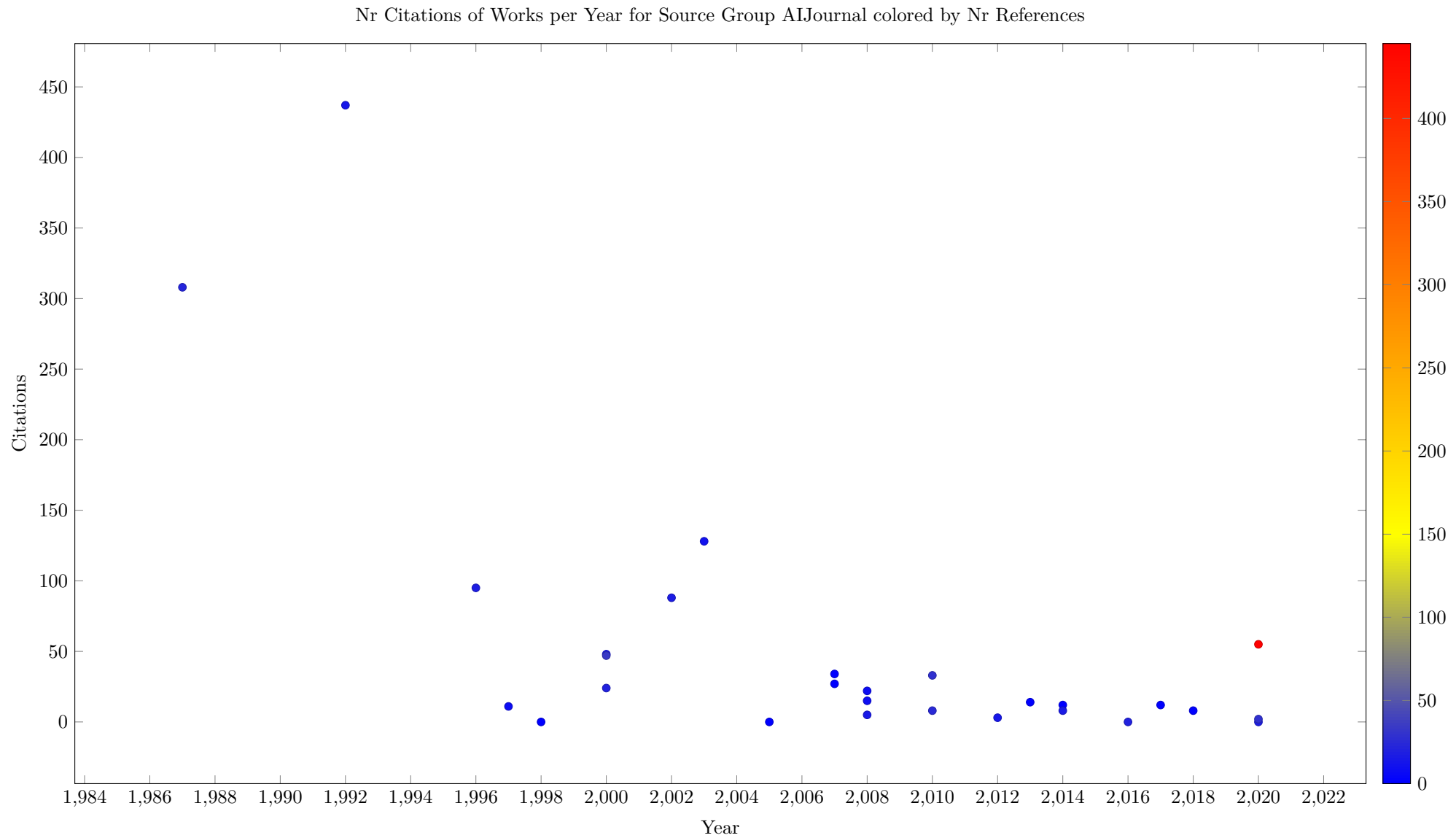


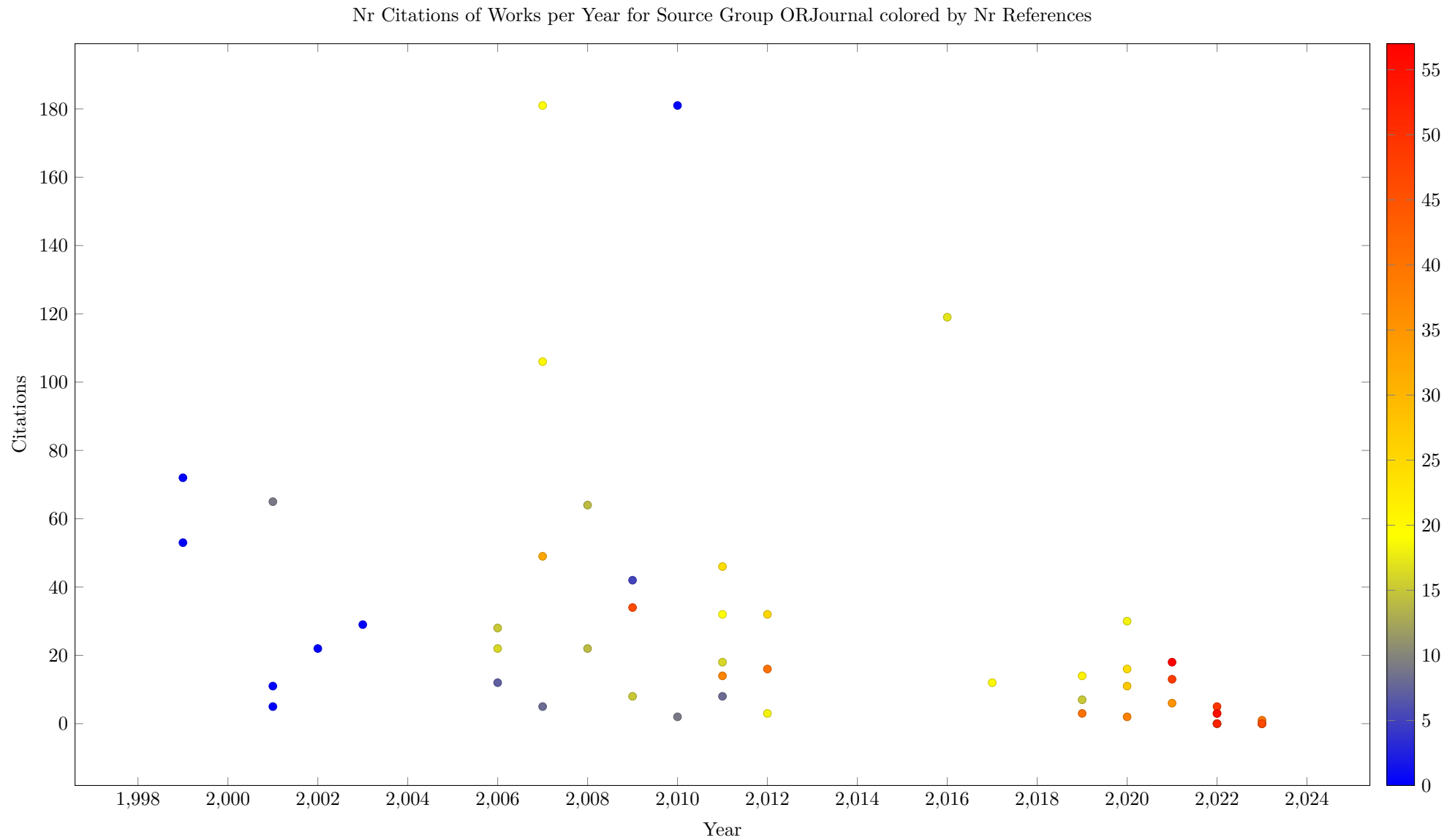


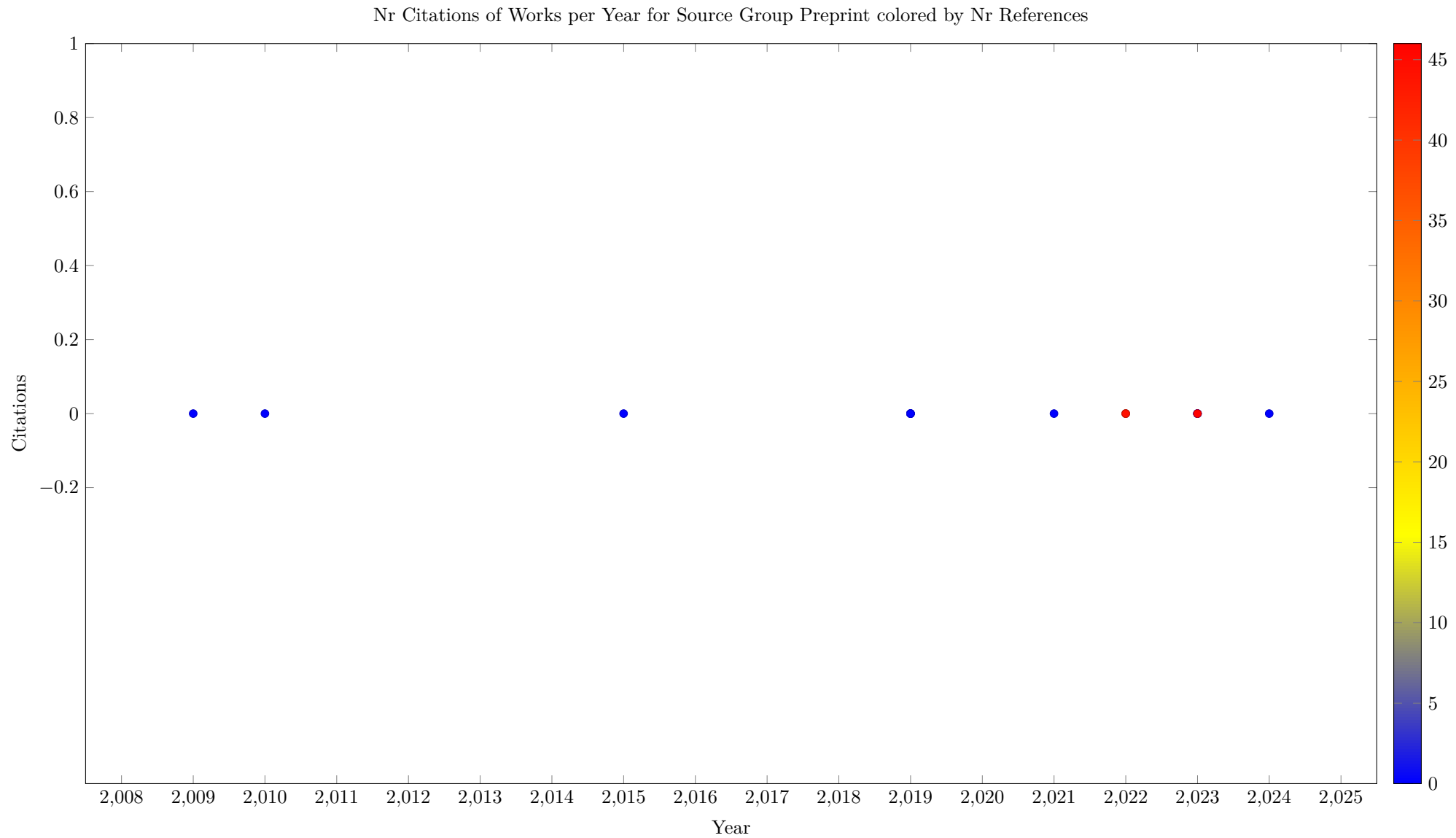


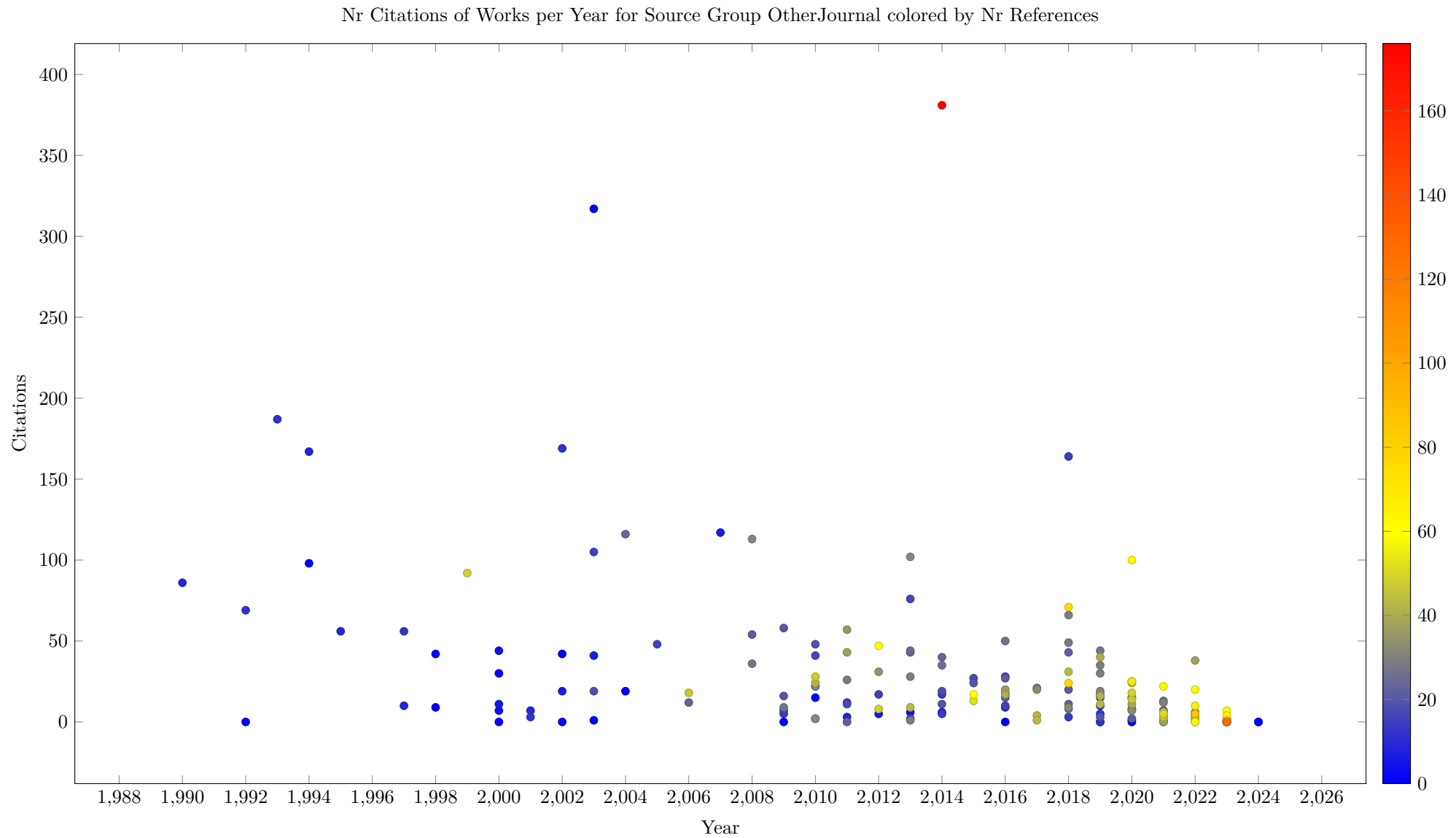


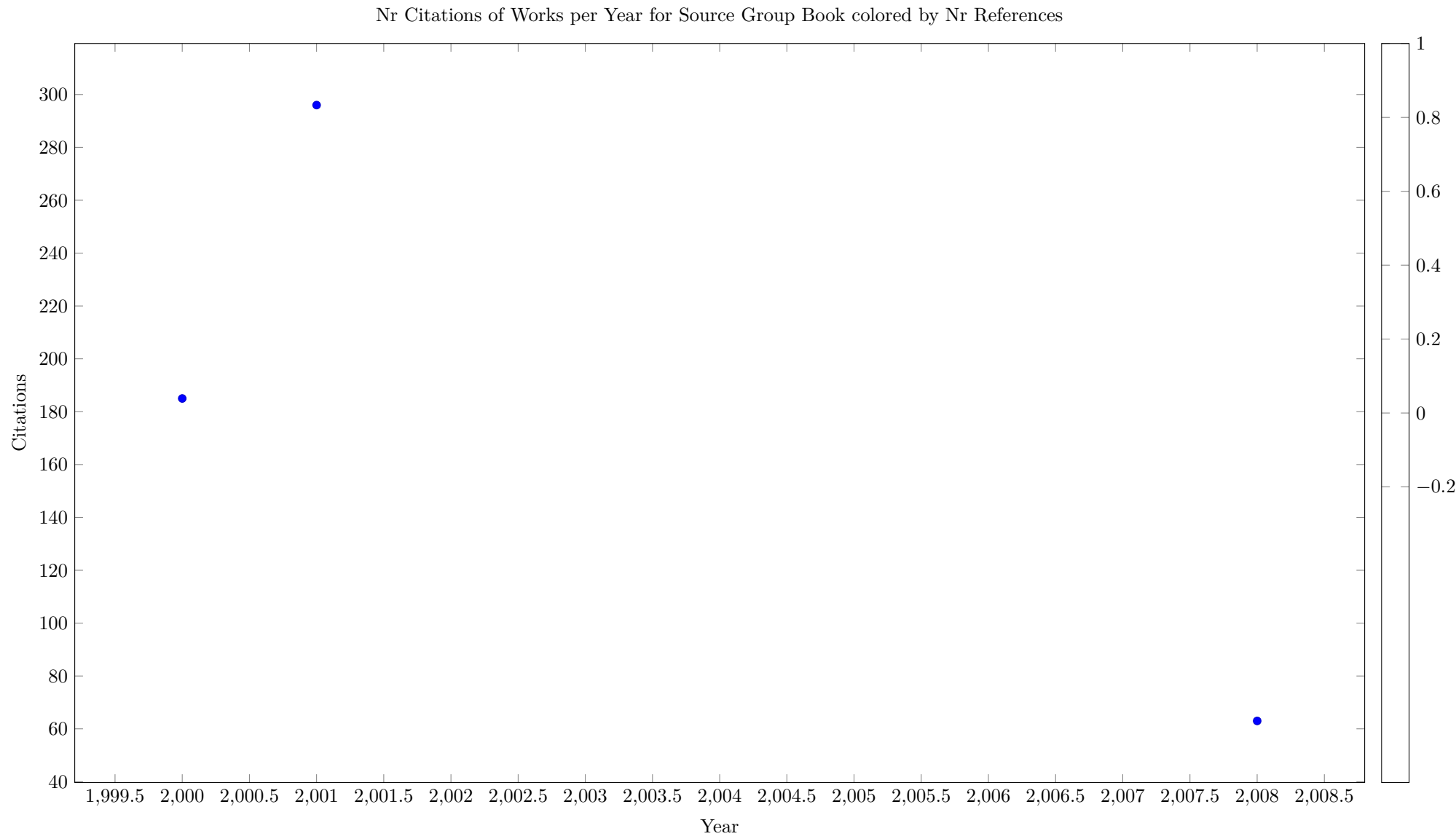


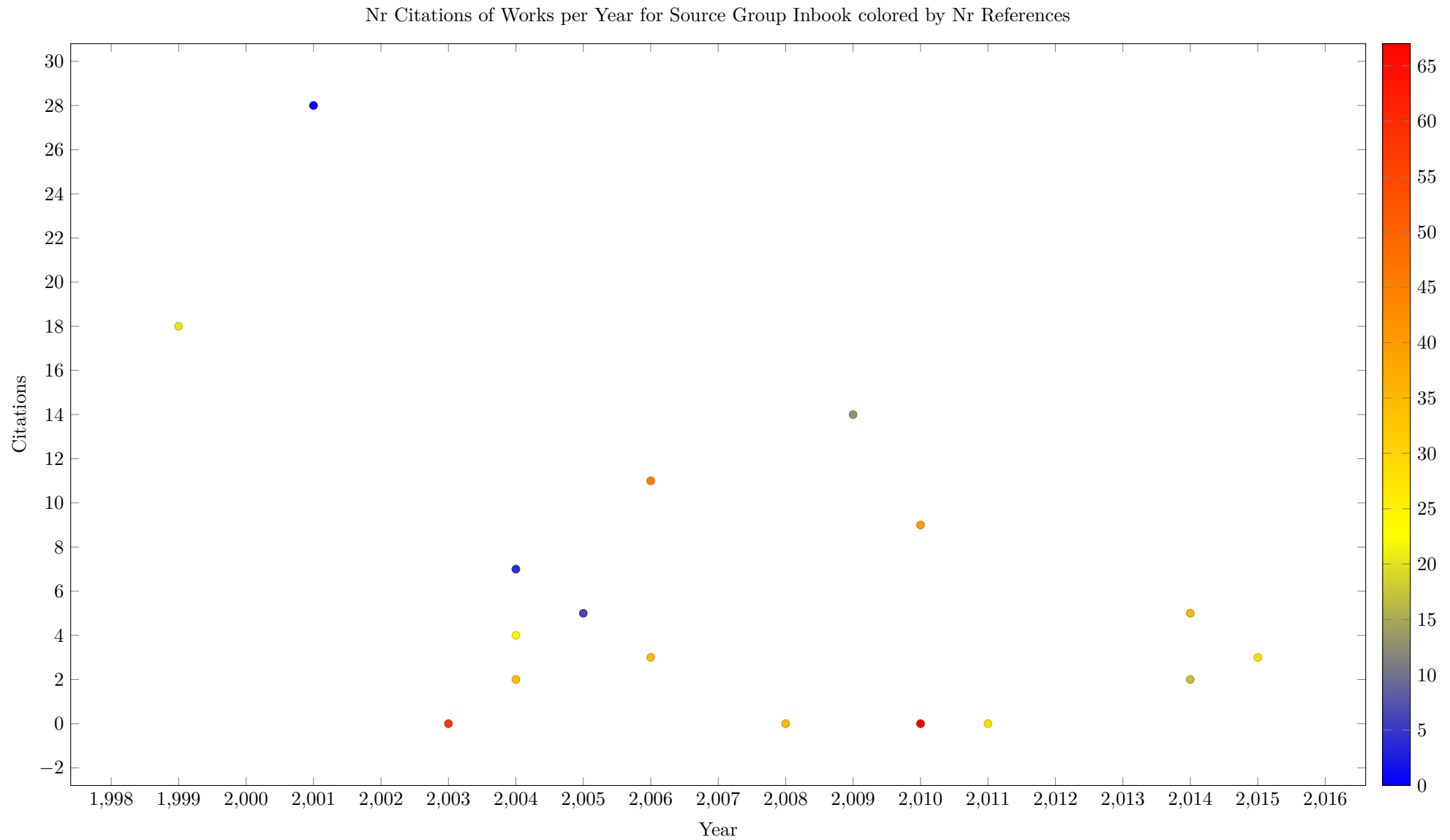




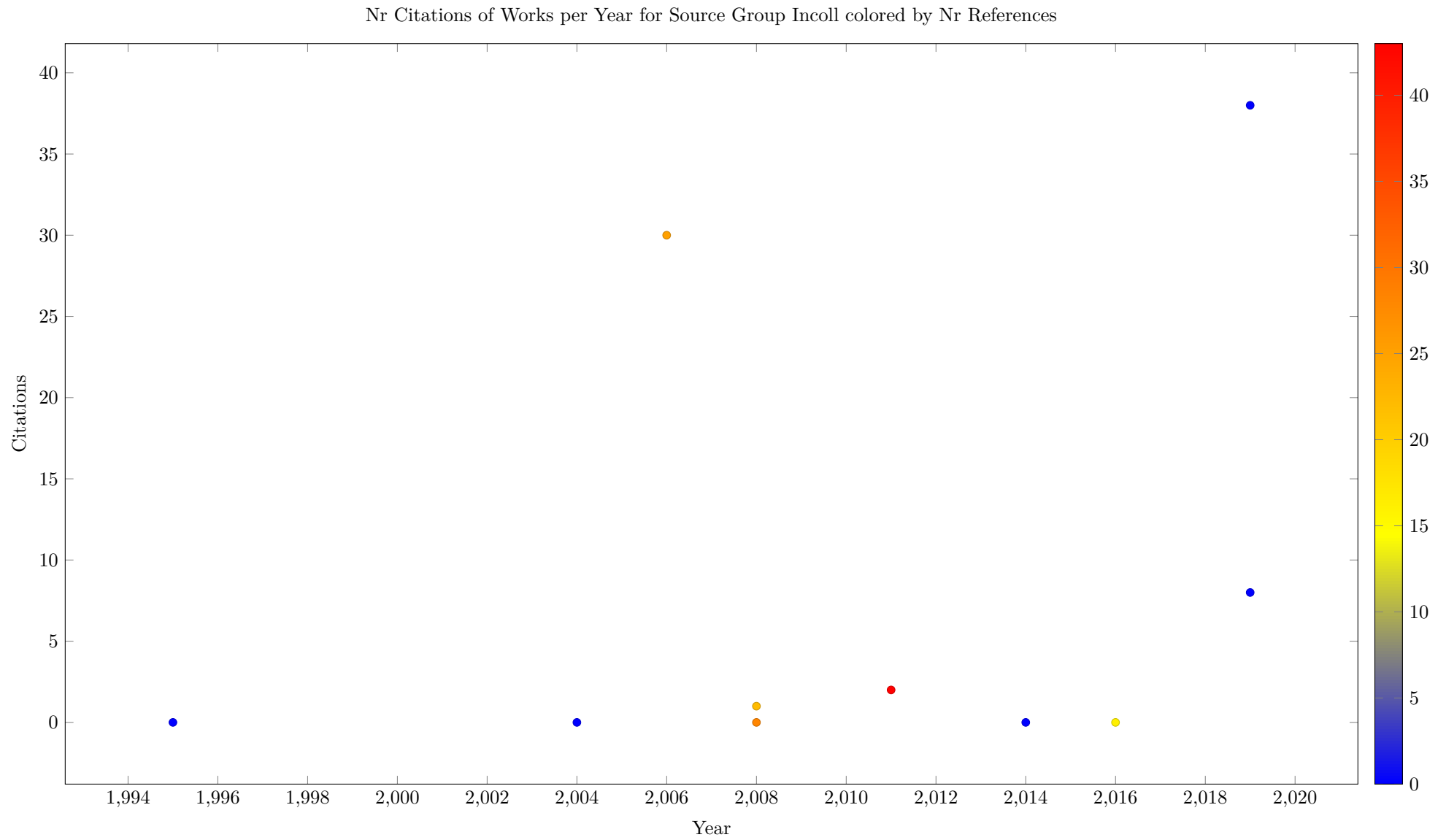


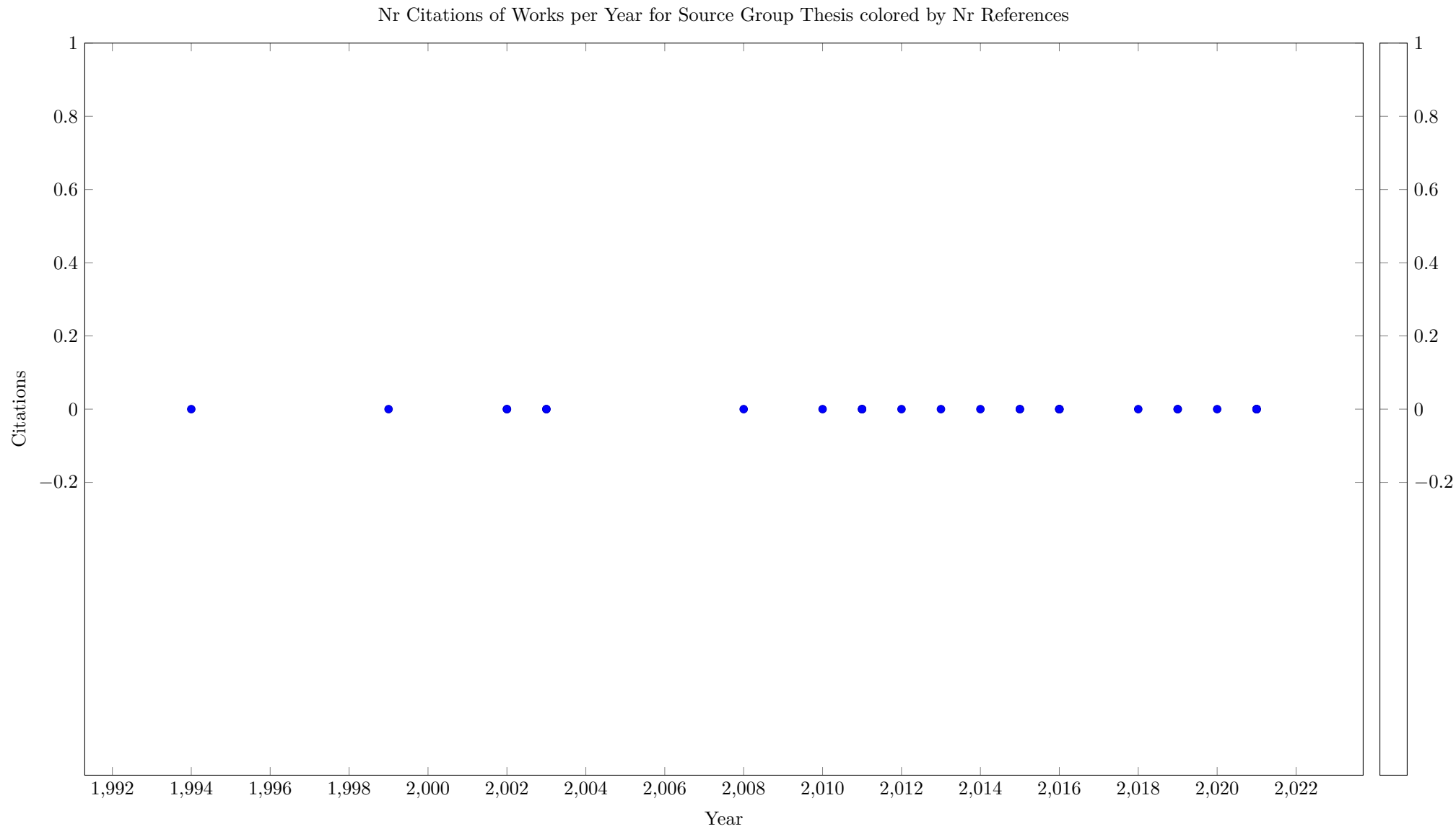












## 15.2 Reference Flows

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 12: Reference Flows

	Background	CP	CPAIOR	ICAPS	AAAI	IJCAI	OtherConf	Constraints	EJOR	InformsJC	AIJournal	ORJournal	OtherJournal	Book	Inbook	Incoll
Background	68	15	3				1	12	7	20	2	10	22	6	3	
CP	127	125	70	2	1	1	10	41	6	26	22	14	73	27	2	4
CPAIOR	96	111	66	1	1	1	16	47	15	25	10	23	66	27	4	2
ICAPS	4	3														
OtherConf	44	36	18				7	18	6	11	8	11	47	10	3	
Constraints	63	58	43	1			7	24	5	14	10	13	55	18	2	1
EJOR	55	3	1					10	21	19	4	18	38		2	1
InformsJC	63	21	11					19	17	26	7	15	34	15	1	1
AIJournal	32	9	4	1			7	3	9	5	16	4	33	1	1	
ORJournal	78	36	17				1	31	23	32	15	19	80	8	2	1
Preprint	4							3	11	4		4	8	1		
OtherJournal	181	67	44				11	89	70	73	46	84	347	25	4	4
Inbook	68	16	10				2	14	8	20	3	16	38	9	4	
Incoll	12	2					2	3	5	1	5	5	4	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 13: Reference Flows Normalized

	Background	CP	CPAIOR	ICAPS	AAAI	IJCAI	OtherConf	Constraints	EJOR	InformsJC	AIJournal	ORJournal	OtherJournal	Book	Inbook	Incoll
Background	3.85	0.27	0.07				0.02	0.61	0.57	1.90	0.17	0.44	0.27	4.76	0.42	
CP	2.29	0.72	0.54	0.08	0.01	0.03	0.08	0.66	0.16	0.79	0.60	0.20	0.29	6.82	0.09	0.30
CPAIOR	2.31	0.85	0.67	0.06	0.02	0.03	0.16	1.01	0.52	1.01	0.36	0.43	0.35	9.09	0.24	0.20
ICAPS	0.53	0.13														
OtherConf	1.07	0.28	0.19				0.07	0.39	0.21	0.45	0.29	0.21	0.25	3.40	0.18	
Constraints	3.19	0.93	0.92	0.12			0.15	1.09	0.37	1.19	0.76	0.51	0.61	12.77	0.25	0.21
EJOR	4.52	0.08	0.03					0.73	2.50	2.62	0.49	1.15	0.68		0.41	0.34
InformsJC	6.00	0.64	0.44					1.62	2.34	4.16	1.00	1.11	0.71	20.00	0.24	0.40
AIJournal	2.72	0.24	0.14	0.20			0.26	0.23	1.11	0.71	2.04	0.26	0.61	1.19	0.21	
ORJournal	3.44	0.51	0.32				0.02	1.22	1.47	2.37	0.99	0.65	0.77	4.94	0.22	0.19
Preprint	0.60							0.40	2.37	1.00		0.46	0.26	2.08		
OtherJournal	2.24	0.26	0.23				0.06	0.99	1.26	1.52	0.86	0.81	0.94	4.34	0.12	0.21
Inbook	9.52	0.71	0.59				0.12	1.75	1.62	4.71	0.63	1.74	1.16	17.65	1.38	
Incoll	2.86	0.15					0.20	0.64	1.72	0.40	1.79	0.93	0.21	6.67	0.59	

## 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

