



单篇科研论文的引用次数一直都备受关注，它不仅直接反映该论文的影响力，而且间接影响刊登该论文的学术期刊的办刊水平。在每年的 Journal Citation Report 中公布的被 Science Citation Index (SCI) 系统收录的期刊的影响因子 (Impact Factor, IF) 通常被用来衡量这些期刊的办刊水平，甚至成为科研评价的指标。因此，在科研和学术活动中，我们都会看到或听到某某期刊的 IF 多少。什么是期刊的 IF 呢？期刊 IF 是 WoS 根据某期刊前两年所发表论文在报告年份中被引用次数除以该期刊在这两年发布的论文总数而决定的。例如，2018 版 IF 就是根据 2016-2017 两年文章在 2018 年内的总引用数除以这两年的文章总数计算得来的。例如，某期刊 2016-2017 两年发表论文 200 篇，这些论文在 2018 年内的总被引次数为 400 次，那么，该期刊 2018 版（2019 年报告年份）的 $IF=400/200=2.000$ 。

那么，问题来了：论文被引次数是怎么被统计出来的呢？

目前，收集论文的被引次数有两大数据库，即 Web of Science (WoS) 和 Google Scholar。WoS 上查到的论文被引用数据来自于该系统中收录的期刊（即 SCI 期刊）论文和书籍的引用，主要是英文期刊论文和书籍的引用。而 Google Scholar 系统中所查到的论文被引用数据来自于该系统中收录的 SCI 期刊论文和书籍和任何非 SCI 期刊论文、毕业论文、书籍和专利等的引用，并不限于英文的引用。

WoS 官方对 IF 的计算方法中的总引用数是根据

WoS 系统内所收录的 SCI 期刊论文对该期刊两年内发表论文的引用计算出来的，也就是说非 SCI 期刊上的论文对该期刊发表论文的引用是不被计算在内的。这一信息很重要，因为大家经常会收到某某期刊约稿邀请信，信中会提及其 Unofficial IF 的信息。这个 Unofficial IF 有两种不同情况：一种是那些期刊已经被 SCI 收录、但还没有正式 IF，该期刊自己根据 WoS 的数据库中的引用数据计算出来的所谓 Unofficial IF；另一种就是那些非 SCI 期刊根据 Google Scholar 上引用数据或者按 WoS 的计算方法自己计算出 Unofficial IF。那么，这里就又有问题了。究竟应该以哪种为准呢？因为 WoS 和 Google Scholar 统计引用的方法不同，计算出的被引次数自然有差异。以某一具体论文为例：标题为“Traditional Chinese Medicine Induced Liver Injury”的论文于 2014 年发表在非 SCI 期刊 *Journal of Clinical and Translational Hepatology* 上。这篇论文在 Google Scholar 引用数为 16，其中 12 篇引文是发表在 SCI 期刊上的，4 篇是发表在非 SCI 期刊上的。如果按 WoS 的统计方法，这篇论文的引用次数应该是 12，而非实际被引用的 16。所以，为了避免误导读者，非 SCI 期刊在计算 Unofficial IF 时应按 WoS 统计方法，尽量跟传统的“IF”保持一致。

同样的，即使是 SCI 期刊，根据 Google Scholar 和 WoS 数据来计算其被引次数也是不同的。下面举两个具体例子说明：

➤ “Trends in Use of and Reproductive Outcomes

Trends in Use of and Reproductive Outcomes Associated With Intracytoplasmic Sperm Injection		JAMA-JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION		
Web of Science: 20	Google Scholar: 35			
Title		Journal		
Economic aspects of infertility care: a challenge for researchers and clinicians		HUMAN REPRODUCTION		
Mammalian pre-implantation chromosomal instability: species comparison, evolutionary considerations, and pathological		SYSTEMS BIOLOGY IN REPRODUCTIVE MEDICINE		
Recent advances in the genetics of testicular failure		ASIAN JOURNAL OF ANDROLOGY		
Trends in ectopic pregnancy rates following assisted reproductive technologies in the UK: a 12-year nationwide analysis		HUMAN REPRODUCTION		
Sperm cryopreservation and reproductive outcome in male cancer patients: a systematic review		REPRODUCTIVE BIOMEDICINE ONLINE		
Varicocele management in the era of in vitro fertilization/intracytoplasmic sperm injection		ASIAN JOURNAL OF ANDROLOGY		
Chromosomal instability in mammalian pre-implantation embryos: potential causes, detection methods, and clinical conse		CELL AND TISSUE RESEARCH		
The need to improve patient care through discriminate use of intracytoplasmic sperm injection (ICSI) and improved under		ANDROLOGY		
Determinants of cumulative ART live-birth rates in a single-center study: age, fertilization modality, and first-cycle outco		ARCHIVES OF GYNECOLOGY AND OBSTETRICS		
Lessons learned in andrology: from intracytoplasmic sperm injection and beyond		ANDROLOGY		
Spermometer: electrical characterization of single boar sperm motility		FERTILITY AND STERILITY		
Limitations and barriers in access to care for male factor infertility		FERTILITY AND STERILITY		
Comparison of normal and abnormal fertilization of in vitro-matured human oocyte according to insemination method		JOURNAL OF OBSTETRICS AND GYNAECOLOGY RESEARCH		
Fertility treatments and adverse perinatal outcomes in a population-based sampling of births in Florida, Maryland, and U		BLOG-AN INTERNATIONAL JOURNAL OF OBSTETRICS AND GYNAECOLOGY		
Effect of normal sperm morphology rate (NSMR) on clinical outcomes and fertilization methods selection in the ultra-shor		GYNECOLOGICAL ENDOCRINOLOGY		
FSHB-211G>T stratification for follicle-stimulating hormone treatment of male infertility patients: making the case for a ph		ANDROLOGY		
Intracytoplasmic Sperm Injection and Reproductive Outcomes		JAMA-JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION		
Assisted reproductive technologies for male subfertility		COCHRANE DATABASE OF SYSTEMATIC REVIEWS		
High doses of gonadotropins for controlled ovarian hyperstimulation: A case-control study		GYNECOLOGIE OBSTETRIQUE & FERTILITE		
The Costs of Hope		ONCOLOGY NURSING FORUM		
SCI papers尚未被统计-5				
Population trends and live birth rates associated with common ART treatment strategies		HUMAN REPRODUCTION		
Use of ICSI in IVF cycles in women with tubal ligation does not improve pregnancy or live birth rates		HUMAN REPRODUCTION		
The role of intracytoplasmic sperm injection in non-male factor infertility in advanced maternal age		HUMAN REPRODUCTION		
Concepts in diagnosis and therapy for male reproductive impairment		Lancet Diabetes & Endocrinology		
A meta-analysis of sperm donation offspring health outcomes		Journal of Developmental Origins of Health and Disease		
非SCI引用-13				
Perinatal outcomes following intracytoplasmic sperm injection (ICSI) versus conventional in vitro fertilization (IVF)		FERTILITY AND STERILITY		Poster
Day 3 embryo transfer (ET) versus pushing to day 5 in patients with few embryos		FERTILITY AND STERILITY		Poster
Ongoing Developments in ART and Pregnancy Outcome		Clinical Management of Pregnancies following ART		Book (Springer)
The Business of Being Made: The Temporalities of Reproductive Technologies, in Psychoanalysis and Culture		The Business of Being Made: The Temporalities of Reproductive Techno		Book (Taylor & Francis Group)
Rita de Cássia Savio Figueira				Thesis
Importancia del tamaño uterino en el diagnóstico y pronóstico de las mujeres con problemas de fertilidad				Thesis
Use of ICSI on rise, but are outcomes better?		Contemporary OB/GYN		Website
Assisted reproductive technology in Europe. Usage and regulation in the context of cross-border reproductive care		FamiliesAndSocieties Working Paper Series		
Limitations and controversies in determining the predictive value of oocyte and embryo morphology criteria		Revista Brasileira de Ginecologia e Obstetrícia		
Determinants of cumulative ART live-birth rates in a single-center study: age, fertilization modality, and first-cycle outco		ResearchGate version		
Treatment for High Levels of Sperm DNA Fragmentation and Nuclear De condensation: Sequential Treatment with a Pote		Austin Journal of Reproductive Medicine & Infertility		
Clinical Evidence for the Importance of 1-Carbon Cycle Support in Subfertile Couples		Austin Journal of Reproductive Medicine & Infertility		
Stimulation ovarienne à fortes doses de gonadotrophines en FIV: étude rétrospective cas-témoins au CHU de Nantes		Gynécologie Obstétrique & Fertilité		
被标记的三篇文章是没有被Google Scholar 统计的。				

图1

Associated With Intracytoplasmic Sperm Injection” 是一篇于2015发表在美国医学协会杂志(JAMA)上的论文。这篇论文的 WoS 数据库中的总引用数为 20, 而在 Google Scholar 上面的引用数为 35。WoS 统计的 20 篇引文当然都是发表在 SCI 期刊上的, 而 Google

Scholar 中的这 35 个引用情况就有些复杂了: 有 22 篇引文发表在 SCI 期刊上面, 这其中有 17 篇已经被 WoS 统计在内, 5 篇还未被统计; 另外有 13 次引用来自于 SCI 期刊的会议展板摘要、非 SCI 期刊论文、毕业论文、网页和 ResearchGate 上的重复发布。而 WoS 中的 20

Hypofractionated radiotherapy versus conventionally fractionated radiotherapy for patients with intermediate-risk loc		LANCET ONCOLOGY		
Web of Science: 13	Google Scholar: 27			
Title		Journal		
Hypofractionated versus conventionally fractionated radiotherapy for patients with prostate cancer (HYPRO): late toxicity results from		LANCET ONCOLOGY		
Conventional versus hypofractionated high-dose intensity-modulated radiotherapy for prostate cancer: 5-year outcomes of the rando		LANCET ONCOLOGY		
Hypofractionation for prostate cancer: a word of caution		LANCET ONCOLOGY		
Hypofractionation for prostate cancer: tested and proven		LANCET ONCOLOGY		
Hypofractionated versus conventionally fractionated radiotherapy for patients with localised prostate cancer (HYPRO): final efficacy i		LANCET ONCOLOGY		
Exploiting Gene Expression Kinetics in Conventional Radiotherapy, Hyperfractionation, and Hypofractionation for Targeted Therapy		SEMINARS IN RADIATION ONCOLOGY		
Radiation Therapy in Prostate Cancer Defining the Benefit of Hypofractionation		AMERICAN JOURNAL OF CLINICAL ONCOLOGY-CANCER CLINICAL TRIALS		
Common genetic variation associated with increased susceptibility to prostate cancer does not increase risk of radiotherapy toxicity		BRITISH JOURNAL OF CANCER		
Evolving Paradigm of Radiotherapy for High-Risk Prostate Cancer: Current Consensus and Continuing Controversies		PROSTATE CANCER		
Prostate Radiotherapy in the Era of Advanced Imaging and Precision Medicine		PROSTATE CANCER		
Macroscopic Hematuria After Conventional or Hypofractionated Radiation Therapy: Results From a Prospective Phase 3 Study		INTERNATIONAL JOURNAL OF RADIATION ONCOLOGY BIOLOGY PHYSICS		
Radiotherapy of prostate cancer with curative intent		ONKOLOGE		
Localized prostate cancer. Radiotherapeutic concepts		UROLOGE		
SCI papers尚未被统计-9				
Radiation therapy for urological cancers		Journal of Clinical Urology		
Quality of life outcomes from a dose-per-fraction escalation trial of hypofractionation in prostate cancer		Radiotherapy and Oncology		
The case for informative phase 2 trials in osteosarcoma		LANCET ONCOLOGY		
Patient-reported quality of life after stereotactic body radiation therapy versus moderate hypofractionation for clinically localized prosti		Radiotherapy and Oncology		
Sexual Function After Hypofractionated Versus Conventionally Fractionated Radiotherapy for Prostate Cancer: Results From the Rand		Journal of Sexual Medicine		
Hypofractionation for Prostate Cancer: Time to Change		Clinical Oncology		
Extreme hypofractionation for early prostate cancer: Biology meets technology		Cancer Treatment Reviews		
Hypofractionation for prostate cancer and PROs		LANCET ONCOLOGY		
Hypofractionated radiotherapy for prostate cancer – Authors' reply		LANCET ONCOLOGY		
非SCI引用-8				
Patient-reported outcomes in the ProtecT randomized trial of clinically localized prostate cancer treatments: study design, and baseline		Urological Oncology		
Radiotherapy in prostate cancer: information, quality of life and prostate volume		Thesis		
Advances in external beam radiotherapy for prostate cancer		Trends in Urology & Men's Health		
Recommandations en onco-urologie 2016-2018 du CCAFU: Cancer de la prostate		Progrès en Urologie		
Das Prostatakarzinom: aktuelle Diagnostik und Therapiestandard		Praxis		
Kurative perkutane Strahlentherapie des Prostatakarzinoms		Der Onkologe		
Lokalisiertes Prostatakarzinom		Der Onkologe		
Evolving Paradigm of Radiotherapy for High Risk Prostate Cancer: Current Consensus and Continuing Controversies		Google Scholar重复		
被标记的三篇文章是没有被Google Scholar 统计的。				

图2

篇引文中有 3 篇还没有被 Google Scholar 统计在内(图 1)。

- 另一篇论文是 2015 年发表在柳叶刀肿瘤杂志 (*LANCET ONCOLOGY*) 上面的论文“Hypofractionated Radiotherapy versus Conventionally Fractionated Radiotherapy for Patients with Intermediate-risk Localised Prostate Cancer: 2-year Patient-reported Outcomes of the Randomised, Non-inferiority, Phase 3 CHHiP Trial”。这篇论文的 WoS 总引用数为 13, 而在 Google Scholar 的引用数为 27。WoS 中的 13 篇引文当然都来自于 SCI 期刊; 而 Google Scholar 统计的这 27 次引用中, 有 19 篇发表在 SCI 期刊上面(其中有 10 篇已经被 WoS 统计在内, 9 篇还未被统计), 另外有 8 次引用来自于非 SCI 期刊论文、毕业论文和 Google Scholar 自己的重复统计。而 WoS 中的 13 篇引文中有 3 篇还没有被 Google

Scholar 统计在内(图 2)。

从如上数据分析看来:

1. 由于 Google Scholar 系统收录出版物范围比 WoS 广, 所以从 Google Scholar 上查到的论文被引次数会比 WoS 多, 但会有重复统计的情况出现。
2. Google Scholar 系统内论文引用信息统计往往早于 WoS。
3. WoS 并不是把 SCI 期刊的所有类型出版物计算在内, 比如发表在 SCI 期刊上的会议摘要就是一个例外。

正如期刊论文的引用总数以及由此衍生的影响因子反映期刊的办刊水平一样, 科研工作者的论文被引次数也可以反映个人为所在领域做出的贡献大小。然而, 使用 WoS 和 Google Scholar 论文引用数据库来统计科研人员论文被引次数时会得出不同的数据。因此, 大家在统计自己的论文被引次数时, 最好统一标准、使用相同数据库来计算, 并明确列出来。