



TABLE DES MATIERES

INTRODUCTION	6
CHAPTER 1. WHAT IS BIBLIOMETRICS?	8
CHAPTER 2. THE ADVENT OF BIBLIOMETRICS	10
Background	10
The need to evaluate research	11
Bibliometrics and the measurement of science	12
CHAPTER 3. BIBLIOMETRIC DATABASES	14
The main bibliometric databases	14
Problems posed by databases in general	15
Types of literature	15
The <i>Science Citation Index</i> (SCI) database	16
Structure and potential of the SCI database	16
The Science Citation Index and its limitations	17
Why do authors use citations?	17
"Negative citations"	17
The "uncited"	18
"Self-citation"	18
The language factor	18
The breakdown by scientific discipline	18
CHAPTER 4. USING BIBLIOMETRIC INDICATORS AND THE PRECAUTIONS TO TAKE	20
Introduction	20
The problems of co-authorship – "whole counting" or "fractional counting"?	21
The problem of database coverage	22
The marketing of bibliometric data and analysis	23
What does the future hold for bibliometric indicators?	23
CHAPTER 5. THE MAIN BIBLIOMETRIC INDICATORS AND THEIR APPLICATIONS	24
Introduction	24
Indicators of science and technology activity	24
The number of papers (Examples 1-4)	24
The number of citations (Examples 5 and 6)	25
The number of co-signers	25
The number of patents (Examples 10 and 11)	26
The number of patent citations (Example 12)	27
Relational indicators (Examples 13 to 16)	28
Co-publications	28

The affinity index (Example 17).....	28
Scientific links measured by citations (Examples 18 and 19).....	29
Correlations between scientific papers and patents (Examples 20-22).....	29
Co-citations (Example 23).....	29
The “co-occurrence” of words (Example 24)	30
Visual representation techniques for scientific fields and countries (Examples 25, 25A and 25B)	30
LIST OF EXAMPLES	32
NOTES	61
REFERENCES	62
ADDITIONAL REFERENCES FOR FURTHER READING	66
ANNEX I. INDEX OF ISO CODES	69