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Chapter 5: Modeling; 5.1 Introduction

5.2 Correlation and regression; 5.3 Autocorrelation and cross-correlation; 5.4 Autoregressive-cross-regressive models (ARCR); 5.5 System analysis and transfer functions; 5.5.1 Composite transfer functions; IUH for the slow flow; Antecedent recession; Effective rainfall; Parameter estimation; 5.5.2 Application for water management; 5.6 Time series models; 5.7 Deterministic models; 5.7.1 Analytic models (equations of groundwater flow); Aquifer in unconsolidated sediments; Fractured rock aquifer; Karst and pseudokarst aquifers; 5.7.2 Representative hydraulic heads; 5.7.3 Numeric Models; References

Chapter 6: Springwater geochemistry; 6.1 Physical chemistry of natural waters; 6.1.1 Introduction; 6.1.2 Chemical equilibrium and mineral saturation; 6.2 Springwater from silicate rocks; 6.2.1 The dissolution of silica and silicates; 6.2.2 Springs in shales, sandstones, and granites; 6.2.3 Cold water springs in volcanic rocks; 6.3 Springwater from carbonate rocks; 6.3.1 The dissolution of limestone and dolomite; 6.3.2 Chemical kinetics and nonequilibrium; 6.3.3 Chemical characterization of carbonate springwater; Hardness; Ca/Mg ratio; Calculated CO_2 partial pressure; The saturation index; 6.3.4 The chemistry of karst springs; 6.3.5 Time-dependent spring chemistry: Chemographs, turbidographs, and storm flow; 6.3.6 Travertine-depositing springs; 6.3.7 Contaminant transport in carbonate springs; Water-soluble compounds; Light, nonaqueous phase liquids; Dense, nonaqueous phase liquids; Metals; Pathogens; Trash; 6.4 Gypsum springs; 6.5 Mineral springs and thermal springs; 6.5.1 Sulfur springs; 6.5.2 Brine and brackish springs; 6.5.3 Carbonated springs from deep sources; 6.5.4 Water chemistry at high temperatures; 6.5.5 Volcanic hot springs; 6.6 Conclusions; Acknowledgments; References

Sommario/riassunto

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