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3.2.4 Buffer amplifiers; 3.2.5 Inverting amplifier; 3.2.6 Line driving; 3.2.7 Power supplies; 3.3 Voltage signals; 3.3.1 Electrometers; 3.3.2 Microvolt amplifier; 3.4 Current measurement; 3.4.1 Current to voltage conversion; 3.4.2 Photocurrent amplifier; 3.4.3 Logarithmic measurements; 3.4.4 Calibration currents; 3.5 Resistance measurement; 3.5.1 Thermistor resistance measurement; 3.5.2 Resistance bridge methods; 3.6 Oscillatory signals; 3.6.1 Oscillators; 3.6.2 Phase-locked loops; 3.6.3 Frequency to voltage conversion; 3.7 Physical implementation

4 Data Acquisition Systems and Initial Data Analysis

4.1 Data acquisition; 4.1.1 Count data; 4.1.2 Frequency data; 4.1.3 Interval data; 4.1.4 Voltage data; 4.1.5 Sampling; 4.1.6 Time synchronisation; 4.2 Custom data logging systems; 4.2.1 Data acquisition cards; 4.2.2 Microcontroller systems; 4.2.3 Automatic Weather Stations; 4.3 Management of data files; 4.3.1 Data logger programming; 4.3.2 Data transfer; 4.3.3 Data file considerations; 4.4 Preliminary data examination; 4.4.1 In situ calibration; 4.4.2 Time series; 4.4.3 Irregular and intermittent time series; 4.4.4 Further data analysis

5 Temperature

5.1 The Celsius temperature scale; 5.2 Liquid in glass thermometry; 5.2.1 Fixed interval temperature scales; 5.2.2 Liquid-in-glass thermometers; 5.3 Electrical temperature sensors; 5.3.1 Thermocouple; 5.3.2 Semiconductor; 5.3.3 Thermistor; 5.3.4 Metal resistance thermometry; 5.4 Resistance thermometry considerations; 5.4.1 Thermistor measurement; 5.4.2 Platinum resistance measurement; 5.5 Thermometer exposure; 5.5.1 Radiation error of air temperature sensors; 5.5.2 Thermometer radiation screens; 5.5.3 Radiation errors on screen temperatures; 5.5.4 Lag times in screen temperatures

5.5.5 Screen condition

Sommario/riassunto

This book describes the fundamental scientific principles underlying high quality instrumentation used for environmental measurements. It discusses a wide range of in situ sensors employed in practical environmental monitoring and, in particular, those used in surface based measurement systems. It also considers the use of weather balloons to provide a wealth of upper atmosphere data. To illustrate the technologies in use it includes many examples of real atmospheric measurements in typical and unusual circumstances, with a discussion of the electronic signal conditioning, data acquisition co
