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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

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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
