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NATIONAL METROLOGY TECHNICAL SPECIFICATION OF THE

PEOPLE'S REPUBLIC OF CHINA

JJF 1946-2021

Calibration Specification for Wave Measuring Devices (Acoustic method)

波浪测量仪（声学法）校准规范

(English Translation)

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Introduction

JJF 1071-2010 "Rules for Compilation of National Metrology Calibration Specifications", JJF 1001 "General Metrology Terms and Definitions", JJF 1059.1-2012 "Assessment and Representation of Measurement Uncertainty" together constitute the basis for the preparation of this specification Series Specifications. This specification mainly refers to GB/T 14914.2-2019 "Ocean Observation Specification No. 2" in terms of technology.

Part. Seashore Observation Technical Requirements for Wave Observation.

This specification is published for the first time.

Specification for calibration of wave measuring instruments (acoustic method)

1 Scope

This specification applies to the ultrasonic ranging principle of wave measuring instrument (hereinafter referred to as "acoustic wave measuring instrument") calibration.

2 Reference documents this specification references the following documents.

JJF 1001-2011 General Metrology Terms and Definitions JJF 1034 Acoustic Metrology Terms and Definitions JJF 1059.1-2012 Evaluation and representation of measurement uncertainty GB 3102.5-1993 Electrical and Magnetic Quantities and Units GB 3102.7-1993 Quantities and Units of Acoustics GB/T 14914.2-2019 Ocean Observation Specification Part 2: Coastal Observation for dated references, only the dated version applies to this specification; for undated references the latest version (including all amendments) applies to this specification.

3 Terminology

Terms defined in JJF 1001-2011, JJF 1034 and GB/T 14914.2-2019 apply to this specification.

4 Overview

The acoustic wave measuring instrument usually consists of an acoustic transducer, a transmitter, a receiver, a preamplifier module, a filter module, control system, etc. The acoustic wave measuring instrument is based on the principle of sound wave ranging, and the transmitter transmits a wave to the water surface.

A beam of narrow pulsed sound waves, reflected by the water surface, returned to the receiving transducer at the same position as the transmitting transducer to receive, through Accurate wave height can be obtained from wave speed and time, and parameters such as wave period can be obtained from the sequence value of wave height changing with time. acoustic method the wave measuring instrument is mainly used for wave measurement of ocean stations, ports, docks, offshore platforms, rivers, lakes, reservoirs, etc.

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High, period and waveform measurements.

5 Metrology characteristics

5.1 Wave height

a) The upper limit of the wave height measurement range generally does not exceed 20m;

b) The maximum allowable error of measurement. when the wave height is not greater than 1m, generally not more than ±0.10m; when the wave height is greater than 1m, generally not more than ± (0.1 x H 0.1m), where H is the measured value of wave height, the unit is meters.

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