

Session 3.3 RIC Beijing Report

Li Changxing, Nan xuejing Meteorological Observation Center China Meteorological Administration

Major contributor: Zhang yong, Zhang xuefeng

Outline

1. General Introduction of RIC Beijing

2. Main Activities in the past three years

3. International Cooperation

History of RIC Beijing



中华人民共和国 法定计量检定机构

The People's Republic of China Certificate of Metrological Authorization to The Legal Metrological Verification Institution

(国)法计(2015)00018号

国家气象计量站;

美清沪

根据《中华人民共和国计量结 定计量检定机构监督管理办法》的 评定合格,现役权你单位为法定计 工作,特发此证(授权区域和项目

This is to certify that your organiza the authorized items in accordance with Republic of China, the Rules for the Impler of China, and the Acts for the Supervision Institution. Your organization is hereby an carry out metrological verification, calibrat anneci).

批准人签名: Approved by



资质认定证书

编号: 180021342284

名称:中国气象局气象探测中心计量站

地址:北京市昌平区振兴路2号2号楼1-3层(102299)

经审查, 你机构已具备国家有关法律, 行政法规规定的基 本条件和能力, 现于批准, 可以向社会出具具有证明作用的数 据和结果, 特发此证, 资质认定包括检验检测机构计量认证。

检验检测能力及授权鉴字人见证书附表。 你机构时外出具检验检测报告或证书的法律责任由 中 国气象局气象探测中心 承担。

冬证书由国家认证认可监督管理委员会监制,在中华人民共和国境内有效

许可使用标志 发证日期: 2018 年 06 月 22 日 有效期至: 202 年 10 21 日 发证机关: 202 年 10 21 日 Cec

QUALITY MANAGEMENT SYSTEM CERTIFICATE

Certificate No. 00118Q310417R0M/46500 We hereby certify that

Meteorological Observation Center of China Meteorological Administration

Unified Social Credit Code: 12100000717804479

Registration Address No.46, Zhongguancun South Street Haidian District, Beijing, China/Operation Address: No.46, Zhongguancun South Street, Haidian District, Beijing, China/Building Z. Metoorological Science and Technology Park. Zhenxing Road, Changping District, Beijing, China/Weather Bureau Yard, East Road, Old Palace Town, Daxing District, Beijing, China

of its

ment System

ISO 9001:2015

ological Observation in China

ecking validity of the certificate.

w.cnca.gov.cn)

compliance with the standard

Applies in the following area:

tember 20, 2018 Valid until: September 19, 2021

with an Acceptance Notice of Surveillance Audit issued by CQC

f Certification and Accreditation Administration of the People's

Net

IFICATION CENTRE

Road) Xilu(West Road), Beijing 100070, China

2015年版



China National Accreditation Service for Conformity Assessment LABORATORY ACCREDITATION CERTIFICATE (Registration No. CNAS L11135)

Metrology Service, Meteorological Observation Center, China Meteorological Administration

(Legal Entity: Meteorological Observation Centr, China Meteorological Administration) 1-3/F., Building 2, No.2, Zhenxing Road, Changping District, Beijing, China

is accredited in accordance with ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration Laboratories(CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence to undertake the service described in the schedule attached to this certificate.

The scope of accreditation is detailed in the attached schedule bearing the same registration number as above. The schedule forms an integral part of this certificate.

Effective Date: 2018-06-27 Expiry Date: 2024-06-26

Signed on behalf of China National Accreditation Service for Conformity A



China National Accreditation Service for Conformity Assessment(CNAS) is subhicited by Certification and Accreditation Amministion of the People" a Republic of China's (ChiCA') to operate the national accreditation schemes for conformity assessment (CHAS) is subjictive of the International Schemer Accreditation Cooperation Autor Recognition Arrangement (LAC WRA) and the Asia Pacific Laboratory Accreditation Cooperation Muha Recognition Arrangement (PLAC MRA). The safaty of the certificate can be decided on CMAS evolution International Amministry of the China Accessition (Accessition Cooperation Muha) and the Asia Pacific Laboratory Accessitation Cooperation Muha (PLAC MRA). The safaty of the certificate can be decided on CMAS evolution International Complexition Arrangement (APLAC MRA).

RA II WIGOS Workshop - Regional WIGOS Centres (RWCs) and its services for Members, Tokyo, Japan, 6-9 March 2019

RIC Beijing Director: Dr. Li Changxing

- Doctor(29%)Master(51%)
- Bachelor(20%)

- •Managerial: (25%)
- •Technical: (75%)

69 persons



Laboratory of RIC Beijing



Test fields of RIC Beijing







Outline

1. General Introduction of RIC Beijing

2. Main Activities in the past three years

- > Traceability
- > Inter-comparison
- Field test

3. International cooperation

(1) Traceability of Meteorological Instruments



(2) R & D on new calibration methods and standards

- The conventional observation instrument:
 - Cloud
 - ➤ Visibility
 - Present phenomena
- The remote sensing instrument
 - Microwave radiometer
 - Cloud radar
 - LIDAR

Calibration equipment



Calibrate and test forward scatter meter indoors for the first time

For forward scatter meter





Calibration equipment



Simulate hail

Simulate drizzle, rain, snow, sleet

For weather phenomena instrument



Calibration equipment



For atmospheric electric field

instrument

For data logger





Central Calibration Lab for Green House Gases









(3) Field testing for new met. Instruments

Fields tests are recommended : 5 aspects, 10 tasks

- Observational experiments in atmospheric scientific experiments on the Qinghai Xizang Plateau (ongoing)
- Fixed point vertical observation test ("Clairvoyant" project)
- Metropolis Observation experiment (ongoing)
- Operational test of dual polarization weather radar
- Operational test of wind profiler radar (ongoing)
- Operational test of X band netted radar
- Millimeter micro-wave Cloud Radar Operational Test
- Tornado observation test
- Typhoon and air sea coupling observation test ("Sea hawk" project)
- Calibration and test of lidar (ongoing)
- surface and upper air intelligent observation, phased array radar and other observation experiments



(4) Inter-comparison for operation Instruments

Technology upgrade and operation application of radiosonde



RA II WIGOS Workshop - Regional WIGOS Centres (RWCs) and its services for Members, Tokyo, Japan, 6-9 March 2019

Comparison of different cloud height observation equipment



In the test base, Carry out comparative tests on data acquisition rate, accuracy and cloud base height recognition ability of cloud radar, lidar-MPL, laser ceilometer, radio sonde, so as to improve the cloud base height recognition ability. under different cloud types and different weather conditions.

Preliminary conclusion: The cloud base of the cloud radar is lower by -0.5%, and the laser ceilometervis-higher by 5%, recompared with cloud base height of the sounding. 19

Carry out ground test satellite cloud top height



Comparative observations of cloud radar and satellite cloud heights were carried out at seven integrated stations in Beijing to verify the accuracy of satellite cloud inversion from different cloud heights, cloud thickness and precipitation.

Preliminary conclusion: High cloud is lower than 2km, medium cloud is lower than 0.79km and High cloud vom the high side of the strength of t

Comparison of Different Type of Microwave Radiometers

Evaluation method of temperature and humidity profile Comparison of brightness temperature(Observation simulation)



Deviation of O-B brightness temperature in clear sky sample

- Under clear sky conditions, the average of mean square root between the observational and simulated brightness temperature of the four type radiometers is 3.02K.
- > The RPG radiometer shows the smallest error of brightness temperature.



Lighting Test

- Date:2014.10~2015.8
- Site : Guangdong Province
- Standard:artificially-triggered lightning







National Comparison in Yunnan province, China



Solar Radiation Comparison, in Nov., 2018

Outline

- **1. General Introduction of RIC Beijing**
- 2. Main Activities in the past three years
- **3. International Collaboration**

Collaboration with RIC-Tsukuba



Workshop on Quality Management of Surface observations, Japan 2018

Collaboration between RICs



Inter-comparison in the field of Tem, Hum and Pre in 2018

Collaboration between RICs



Inter-laboratory comparison among RAII, RA V and RA VI in 2018

International Tech-training



Providing training for Pakistan, Indonesia, South Africa, Thailand, Burma, etc in China, 2015

International Comparison



Providing calibration services for Mongolia and Pakistan in 2018

Experts visiting



Welcome to RIC Beijing

Members of RAII are welcome to RIC Beijing to calibrate their standard instrument at free!

RIC Beijing No.2, Zhenxing Road, Changping District, Beijing, China Phone: +8610-68400493 Fax: +8610-68409767 E-mail: 576809156@qq.com Thank you Merci 谢谢 ありがとう