



CHINA
EUROPE
Water Platform

**New Approaches on Flood
Measurement**
洪水测量新技术
Michael SOMMER

中欧水资源
合作平台

北京新敏兴业环境科技发展有限公司

June 2021



Introduction Sommer SOMMER

sommer is a company based in **AUSTRIA** with more than 30 years of experience in development and production of high quality and innovative measurement equipment for hydrology and meteorology. SOMMER位于奥地利，具有30多年历史。自成立以来，一直为水文、气象行业提供高质量与创新性测量设备。

sommer is a family-owned business with long and great tradition. SOMMER是家族自有企业，具有行业悠久与杰出的业务传统。

sommer headquarter is in **Austria** and we have offices in **Europe** and **Asia**. SOMMER总部位于奥地利，在欧洲和亚洲有分支机构。

sommer in 10 year more than 4000 installation in china. SOMMER在过去的10年中向中方提供了4000多套设备。



Water is the most precious resource in the world !

水是世界上最宝贵的资源

From data to knowledge 从数据到决策

Prediction of
water
resources 水资源
预测

Quantification
of water 水资源
量化

Interpretation
and
understanding
of data 数据解
读与理解

Reaction 应对



More than 70 % of the water in the Yellow river comes from snow melt 黄河70%以上的水来自于融雪。



Efficient flood management starts with understanding water measurement data 有效的洪水管理始于对测量数据的理解。

Key points要点: Water measurement and data collection 水的测量和数据收集

Value and sharing of data: 数据价值和分享

What is my target in collecting data? 数据采集目标 Who else is interest in my data, or can I use existing data? 其它人对我得数据有兴趣吗? 或者我是否可以使用已知数据?

Data Quality is more important than data quantity: 数据质量比数据量更重要

No point of having a lot of data if you cannot trust the data
如果你不信任数据那有再多的数据也无用。

Know your catchment area: 理解你的流域

You must understand where is your water coming from and which data do I need to make the right decisions
你必须了解你所在流域水是从哪里来的, 并且你要明白你要做出正确决策需要哪些正确数据。

Only with correct and reliable data the right decisions can be made in time 正确及时的决策仅仅建立在正确、可靠的数据基础上。



SOMMER Products

Snow water equivalent 雪水当量
Snow melt 融雪
Snow height 雪厚
Snow temperature 积雪温度
Snow run off 融雪径流



Water level 水位
Water Velocity 流速
Water discharge (Non-contact) 流量
(非接触式)
Water quality 水质



Rain 雨量
Snow fall 雪量
Hail 冰雹
Evaporation 蒸发



Data Logger 数据采集器
Data transmission 数据传输
(GSM/satellite/ radio) (全球通、卫
星、电台)
Data cloud /hosing software
Data analysis 数据云、服务器的
分析软件



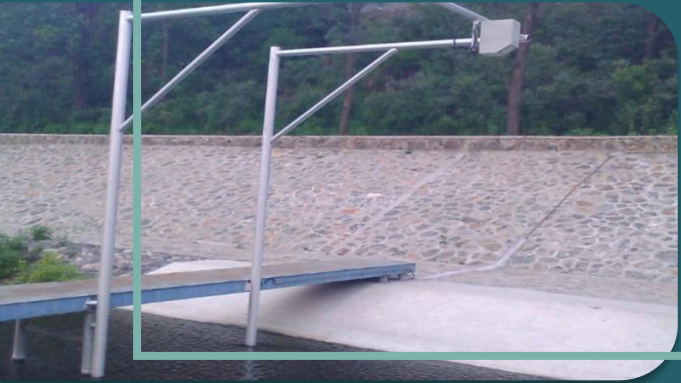
Snowpack analyzer (SPA-2) in the Himalayas 堆雪
分析仪 (SPA-2), 喜马拉雅山



Measuring water flows without touching the
water (RQ-30) in Sichuan province 非接触式测流
(RQ-30), 四川



Non - contact discharge measurement (SQ-
flowmeter) in a drainage and stormwater
tunnel, Hong Kong 非接触式流量测量 (SQ流量
计), 香港排水与暴雨工程涵洞



Non - contact discharge measurement (RQ-30)
sensor for the sponge city project, Beijing 非接触
式流量测量 (RQ流量计), 北京海绵城市雨洪工
程

Sommer Non- contact Radar flowmeter

SOMMER非接触式雷达流量计

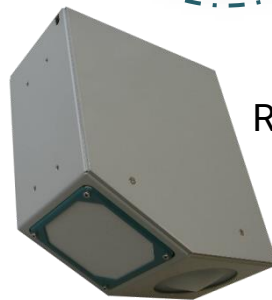
More than
4000
installations in
china 在中国
4000多套正常
运行

SQ-R



Non-Contact
Sensor
Maintenance
free 非接触式传
感器无需维护

RQ-30



Used in more
than 110
Countries 已在
超过110个国家
使用

Highest
reliability and
accuracy 精度
高，可靠性好

编号: TZBX20079

水利先进实用技术 推广证书

水利部南京水利水文自动化研究所、奥地利 SOMMER 环境监测技术公
司:

你单位固定式雷达波水位流量在线监测系统(技术)列入《2020年度水利先进实用技术重点推广指导目录》，认定为水利先进实用技术，特发此证。

自发证之日起，证书有效期三年。

(完成人: 陆云扬、马 湛、李晨希、熊珊珊、刘 晋、嵇海洋、董万钧、魏 广、王少华、曹春燕、王亚娟、赵洪岩、郭丽丽、Michael Sommer、Christoph Sommer。)

二〇二〇年九月二十三日

Sommer Non- contact Radar flowmeter technology Certified by the Ministry of Water Resources of CHINA. SOMMER非接触式雷达水位流量在线监测技术获得水利部科技推广中心认证



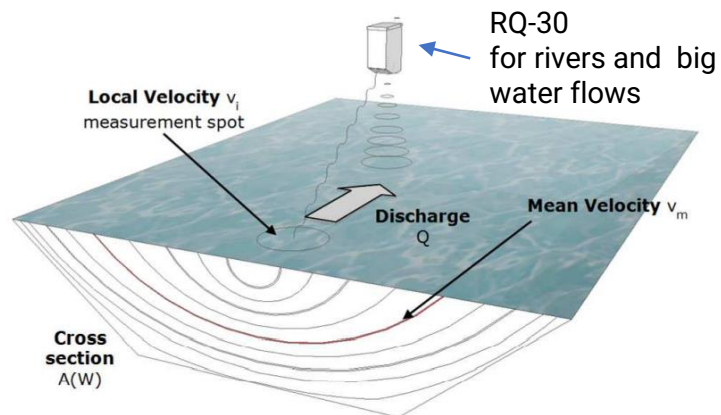
METAS
Swiss Federal Office
of Metrology certified



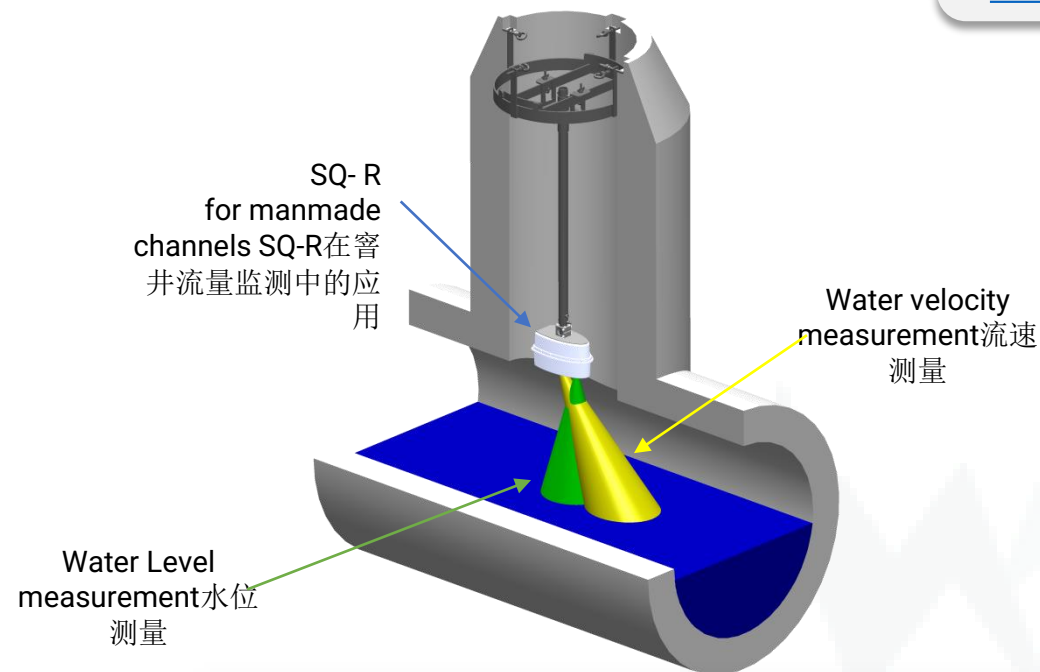
瑞士联邦计量研究院与瑞士联邦气象局双重认证

Sommer Technology Advantage 技术优势

Sommer is the world market leader in non-contact Radar flowmeters: SOMMER是世界非接触式雷达流量计的领军企业



Surface to mean velocity-relationship (k-factors)... is calculated dynamically based on the SOMMER HYDRAULIC MODEL ©, for every water level considering shape and roughness of the cross section. 其领先的数字水力学模型算法依据断面形状、糙率对每个水位级动态在线计算表面流速对断面平均流速关系系数K值。



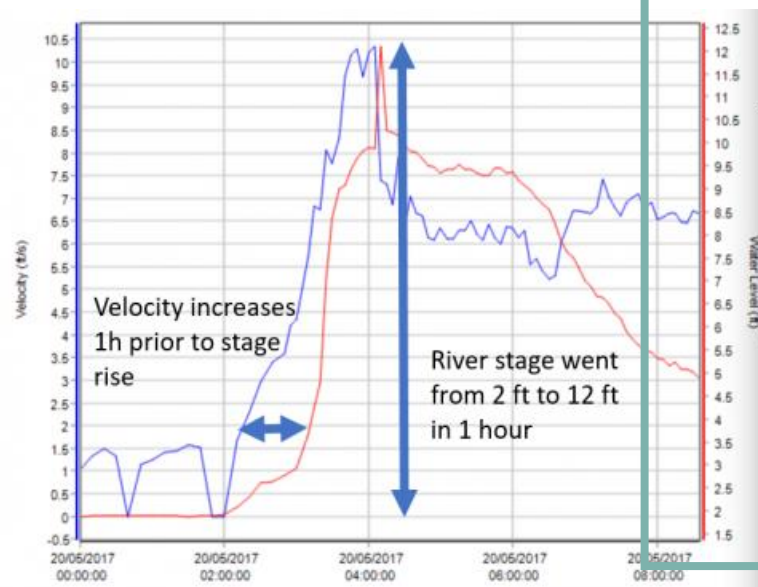
The SOMMER HYDRAULIC MODEL ©, is unique and ensures the highest accuracy of flow measurement in any river and open channel. SOMMER的水力学模型可对任何河流、明渠断面进行高精度流速分布模拟与流量计算，其独特算法确保流量计算结果的高精度。

USE CASE: Falls Creek, USA应用案例，美国

Flash floods caused by heavy rain 暴雨引起突发性洪水

Earlier detection of flash flood due to radar velocity measurement 雷达测速技术确保对突发性洪水早期监测

Non-Contact Radar sensor are the future of the US hydrological measurements 非接触式雷达传感器可应用在美国未来水文测验业务中



National Severe Storms Lab

<https://www.nssl.noaa.gov/>

Click here to find more information about: 更多信息
请查询美国国家海洋和大气管理局国家极端风暴实验室网站
[NSSL project to utilize radar technology for flood warnings](https://www.nssl.noaa.gov/)

USE CASE: Beijing smart / Sponge city project

应用案例，北京智慧水利与海绵工程

Storm water
and flood
protection 暴雨
性洪水与防洪
预警

Utilization of
storm water 城
市雨洪优化利
用

Refill
Groundwater
levels with
Storm water 城
市雨洪地下水
回灌

Optimization
of hydrological
cycle 水文循环
优化调度

Project under:

China Water Department
中国水利部门



Why measure the water flow with SOMMER Non-contact Radar sensors ?

为何使用**SOMMER**的非接触式雷达传感器监测水位、流速、流量。



Know the exact quantity of water to make the right decisions
可感知确切水量进行正确决策



Highest accuracy and reliability in low flow, same as high flow
可在高中低水不同水位级上获得高精度、高可靠性流量数据



Not affected by solids, waste, debris and turbidity
不受泥沙、污水、垃圾、浑浊水体影响



Easy integration in local datalogger and data collection
systems与中方数传仪零难度对接实现在线数据采集与传输





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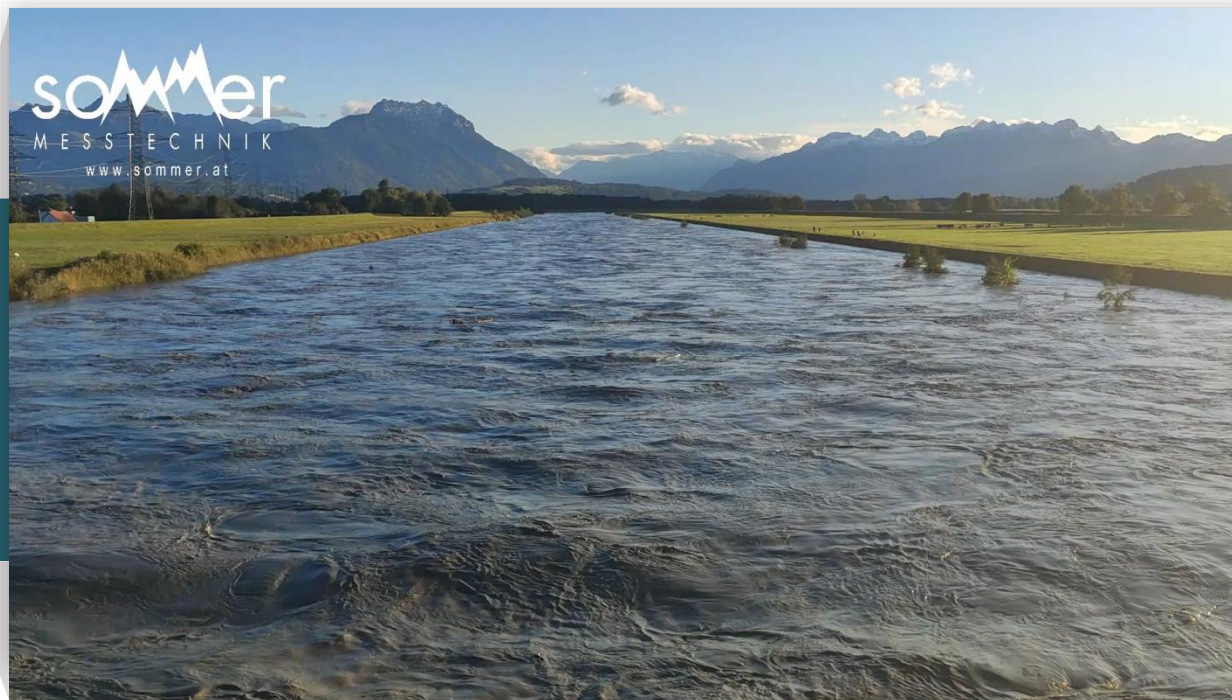
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最新信息，请参与！

THANK YOU