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The International Surface Temperature Initiative: an overview

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The International Surface Temperature Initiative, launched in 2010, aims to create a suite of improved land surface air temperature products at global, regional and local scales in support of climate services. The initiative reports to WMO CCl, BIPM and TIES reflecting the involvement of climate scientists, metrologists and statisticians within the enterprise. It is intended to provide an end-to-end treatment of the problem from data collection, through data analysis, verification and provision. This presentation will firstly focus on those enabling aspects which have been undertaken to support analysis and understanding of the data. It will then close by outlining how analysts may become involved and stress how such involvement is absolutely key to successfully meeting the stated aims - i.e. that your participation matters and is hugely valuable.

The first significant pillar has been the creation of a vastly improved set of monthly holdings. These holdings greatly expand on pre-existing monthly holdings used in global monitoring, taking us from c.7000 stations to in excess of 32,000 stations. By taking various daily and monthly holdings from NMSs, existing international compilations and a variety of sources including e.g. agricultural ministries, along with valuable data rescue efforts and merging these based upon station attributes (data and metadata) we have created a far more complete database. This work, led by NOAA's National Climatic Data Center, shall be summarised and the principal attributes of the holdings outlined.

The second significant pillar is the creation of a set of benchmarks which exactly mimic the spatio-temporal characteristics of the databank. These benchmarks build upon the successful COST HOME project and similar benchmarking assessments. A variety of open and blind benchmarks are being produced. Blind benchmarks will be assessed by a dedicated working group and an assessment performed on suitability for various posited purposes as well as strengths and weaknesses and potential for residual biases.

As should be obvious from the above, our ability to understand changes in land surface air temperature stand to be significantly improved. The data holdings and benchmarks offer a real opportunity to substantively improve our understanding. But, this understanding will only be realised if multiple analysts become engaged in producing products from the holdings and engaging in the benchmarking exercise. The presentation will close with how you can become involved and what value your involvement would bring. More information can be found at www.surfacetemperatures.org.