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Topic	T2.2 Fixed points for contact thermometry
Oral or Poster Presentation	Oral

A COMPARISON OF XENON TRIPLE POINT REALIZATIONS

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At present, International Temperature Scale of 1990 (ITS-90) calibrations of standard platinum resistance thermometers below the Water Triple Point require realization of the Mercury Triple Point. Unfortunately, the Mercury Triple Point is situated very close to the Water Triple Point, inflating the scale sensitivity to fixed point realization errors and non-uniqueness. In light of this non-ideal positioning, and increasingly restrictive health and safety regulations regarding the transportation and use of Mercury, a safe alternative fixed point located somewhere midway between the Argon Triple Point and the Water Triple Point would be desirable.

The Xenon Triple Point is now proven to be a valid candidate for such a fixed point. It was realized in 2005 at the National Research Council Canada, demonstrating it to be a first class fixed point provided the Krypton content is close to nil, a fact not realized in previous experiments. In the period 2013-2015 INRiM independently realized this fixed point, and in 2017 a direct comparison of the two fixed point cells was performed at INRiM, leading to a measured temperature difference of (0.17 ± 0.08) mK, $k = 1$ uncertainty. Details of the comparison will be presented. A paper on this work is in course of publication.