MS23-P05 | Crystal Structure of Incommensurately Modulated ß-$NaBrF_4$

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Bromine trifluoride, BrF_3, can act as a Lewis acid in the reactions involving certain fluorides and can form compounds known as tetrafluoridobromates(III), $M(BrF_4)_n$, where *M* is a cation. These compounds are renowned for their strong oxidizing and fluorinating properties, which define several possible applications for them, such as quantitative analysis of noble metals in natural ores, urban mining, and bromination of organic substrates.

Recently in our report on the crystal structure of sodium tetrafluoridobromate(III) [1] we suggested that another modification of $NaBrF_4$ may exist, which was deduced from a few additional reflections in its powder X-ray diffraction pattern. At the time of the publication we could neither unambiguously index those reflections, nor find the conditions which would allow us to obtain the other modification phase-pure. Here we will present the results of our further investigations on the nature of the previously unknown phase, which has been found to be a new incommensurately modulated polymorph modification of sodium tetrafluoridobromate(III), β-$NaBrF_4$.

[1] S. I. Ivlev, R. V. Ostvald, F. Kraus, *Monatsh. Chem.* **2016**, *147* (10), 1661–1668. DOI: 10.1007/s00706-016-1799-2.