

# Resonance Island Experiments at BESSY II and MLS for User Applications

## Summary

Beam storage close to a tune resonance ( $Q_x = 1/3, 1/4$ ) could generate resonance island buckets in the  $x, x'$  phase space providing a second stable “island orbit” winding around the standard orbit. Experiments with such an operation mode have been conducted at the Metrology Light Source (MLS) and at BESSY II. These two orbits are well separated and with good life time and stability. This operation mode will offer additional operation flexibility. It has the potential to fulfil simultaneously conflicting user demands, e.g., high vs. low beam current and single, few vs. multi bunch filling. We present successful measurements taken at photon beam lines and discuss the required beam optics set up.

**Primary author:** Dr GOSLAWSKI, Paul (Helmholtz-Zentrum Berlin, HZB)

**Co-authors:** Dr WÜSTEFELD, Godehard (Helmholtz-Zentrum Berlin, HZB); Dr RIES, Markus (Helmholtz-Zentrum Berlin, HZB)

**Presenter:** Dr GOSLAWSKI, Paul (Helmholtz-Zentrum Berlin, HZB)