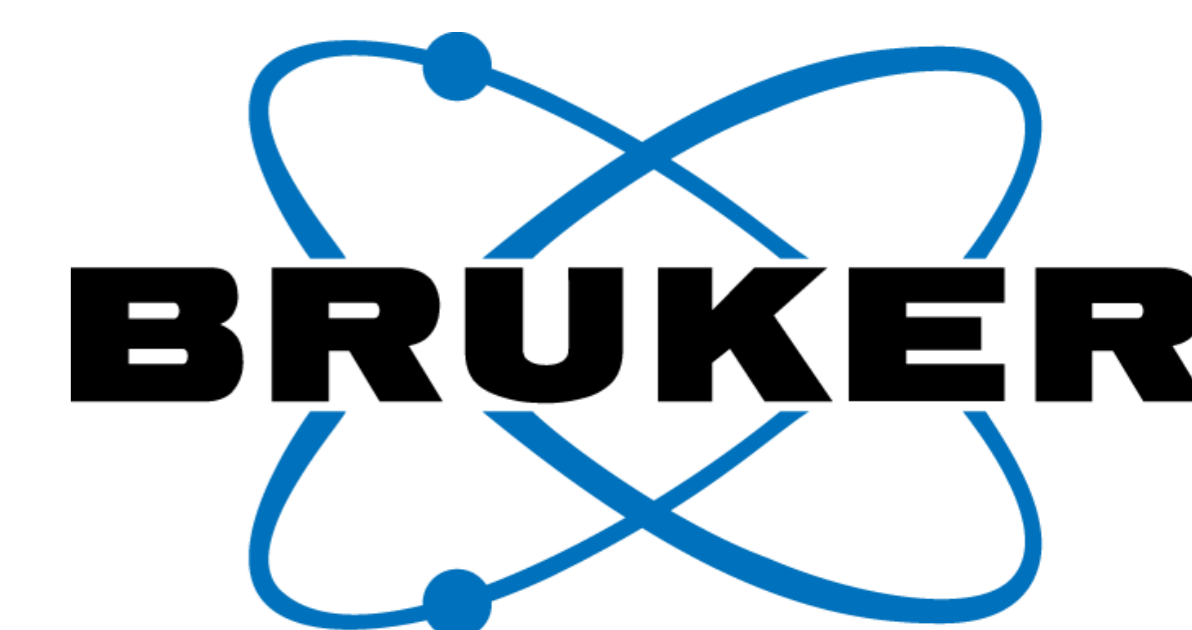
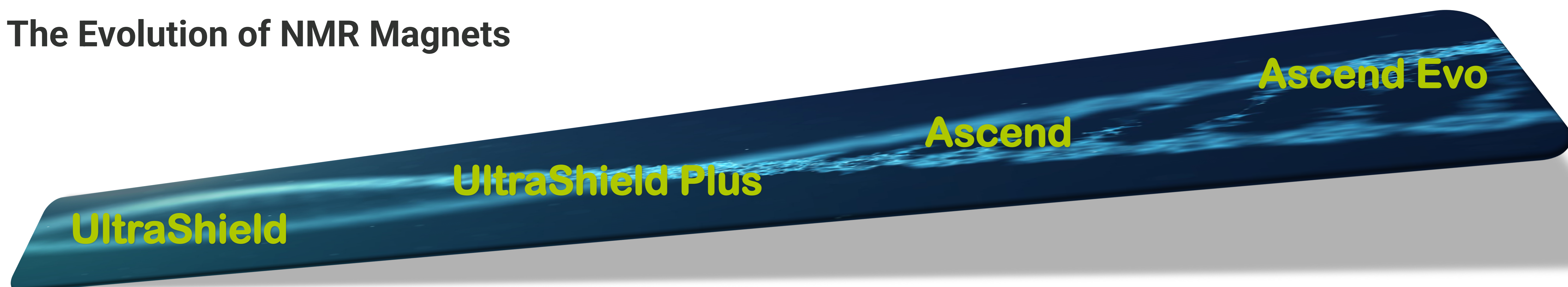


# Ascend Evo 400 MHz NMR Magnet

## > 1 year He hold time and novel shimming



### The Evolution of NMR Magnets



Actively-shielded NMR magnets have been first introduced in the mid 90s. Since then, several generations – including UltraShield, UltraShield Plus, and Ascend - have been developed and used in NMR labs delivering improved performance and making siting of NMR instruments easier.

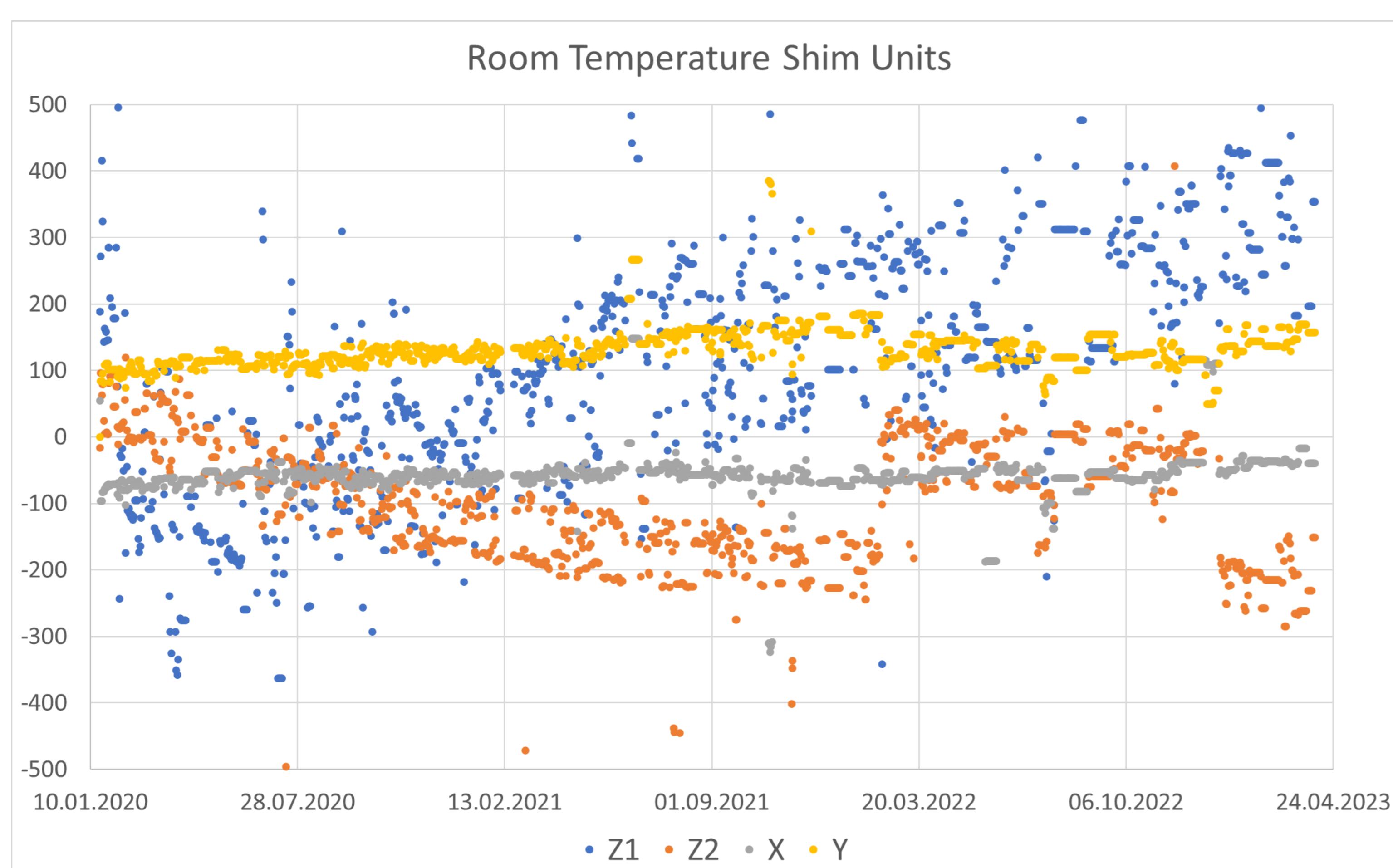
The new Ascend Evo NMR magnets are the latest innovation providing several new benefits:

- Extended helium hold time (between He refills), over 1 year for the 400 MHz magnet.
- Improved magnetic field homogeneity with a new cryogenically cooled shimming technology providing improved basic magnet homogeneity with 14 corrected field gradients (shims).
- Reaching long-term homogeneity almost immediately after the installation enabling early start of research work.
- Rock-steady long term magnetic field homogeneity avoiding downtime.

### Improved Homogeneity and Early Research Work through Innovative Magnet Shimming

All Ascend Evo NMR magnets incorporate a novel cryogenically-cooled shimming technology, which has been patented by Bruker.

- Improved basic magnet homogeneity achieved with now 14 correction field gradients (on-axis and off-axis) compared to 9 gradients available so far.
- Optimum shimming implemented at the magnet factory as part of the production and final test process, typically requiring no adjustments during the installation at the customer site.
- Short settling times allow for virtually immediate use and operation after magnet installation.
- Most stable long term field homogeneity with no field gradient drifts or losses.



Room Temperature shims changes plotted over a period of more than 3 years following the magnet energization, demonstrating fast settling and excellent long term field homogeneity enabled by the novel cryogenically cooled shimming technology. Changes of shim values are associated to sample changes, larger steps correspond to probe changes.

### Primary Magnet Specifications

- Transport: 0.85 m diameter, fits through a normal single-door
- Minimum Ceiling Height: 2.6 m fits in any room
- Operational Weight: 600 kg
- Integrated Vibration Isolators
- Stray Field: 5 Gauss at < 0.5 m horizontally, and < 1.0 m vertically (from magnetic center)
- Electromagnetic Disturbance Suppression (patented technology) EDS typical : > 99%
- Cryogenically Cooled High Order Shim System (on and off axis): 14 gradients
- LN2 Refill Interval: 14 days
- LHe Refill Interval: > 1 year