

Station best practices and requests

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1. Unbiased technique

For a long time we have heard that SLR is the only unbiased technique. However, from the beginning of the SLR we have discussed bias!

2. Diversity of SLR stations

There are many different types of lasers, types of detectors, and types of timers. There are also different ranging techniques and calibration methods.

- Different lasers:
 - YAG, Titanium Sapphire
 - Pulse width from few ps to more than 100ps
- Different detectors and modes:
 - PMT, APD
 - Single photon, multiphoton
- Different calibration methods:
 - Real time or not calibrations
- Different timers:
 - Counter, Event-timer

3. Philosophy

Some stations are always in evolution, or are on time-share, conducting several different types of experiments, and are therefore difficult to keep stable. Other stations are fixed; that is, designed for a single type of experiment over the long term. These stations are more stable, but often not state of the art, as they have a harder time incorporating new refinements to the technology.

4. Workshops

The first workshops can best be described as assemblies of engineers; many of the ideas discussed were actually developed in the stations.

The role of science in the workshops increased workshop after workshop, and engineers realized that, although technology is very important, metrology is even more so.

Changing goals: In the past the challenge was to obtain the highest number of echoes or the first pass on a new satellite. Today the challenge is to obtain consistent data.

5. To reach the millimeter

Today's technology permits accuracy to the millimeter. The major obstacle to reaching this level is usually money, not technique. Millimeter level passes are possible, but it is difficult to maintain this level of data accuracy over a period of years. To be useful, the data must be accurate and stable over the long term.

6. Conclusion

To best reach (or at least to approach) this goal, each manager or station team must address these questions:

Is the positioning of the stations controlled every day, week or year?

Is the meteorological system (barometer) calibrated every year?

Do you control the quality of your data (on the Toshi's web site, for example) or are you waiting for an alarm message?

Is fast data submission compatible with the data quality?

By attending the Clinic Sessions you will understand the importance of these questions, raise others just as important, find answers, and share your ideas.