Simple and accurate fast-tunable laser system based on dual sideband locking

Provides high tuning capability and extreme simplicity.

Previous laser tuning schemes for space-based missions based on optical phase-locked loops (OPPLs) involved use of many RF electronics, complicated FPGA setups, and multiple distributed feedback lasers (DFBs) that are not fast-tunable.

**BENEFITS**
- Single laser used for fast and easy tuning
- Fewer components required
- Simple programming requirements
THE TECHNOLOGY
NASA Goddard Space Flight Center has developed a single fast tunable seed laser system that does not involve the use of any OPLLs. Extra phase modulation is added onto a frequency locking system, generating artificial locking points with a known frequency offset, maintaining the stability of the selected frequency.

APPLICATIONS
The technology has several potential applications:
- Laser system development
- Laser sensing systems

PUBLICATIONS
Patent No: 10348052

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GSC-17835-1, GSC-TOPS-202