

## **The correlation of inhomogeneous broadening and the efficiency of data locking in optical echo processors**

Nefed'ev L., Khakimzyanova G.

*Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia*

---

### **Abstract**

The formation of responses of stimulated photon echo and the efficiency of data locking under the action of a spatially inhomogeneous electric field on a resonance medium are analyzed. It is shown that the action of a spatially inhomogeneous electric field on a resonance medium between the first and second excitation laser pulses leads to the reversible destruction of the phase memory of the medium, which manifests itself in a change in the time-frequency correlation of inhomogeneous broadening. The possibility of controlling the efficiency of data locking by varying the gradient of an external nonuniform electric field is considered. © 2005 Pleiades Publishing, Inc.

<http://dx.doi.org/10.1134/1.1858037>

---