COMMUNICATIONS

Comment

Comment on the paper "New diode laser light source for absolute ranging two-wavelength interferometry"

Stanley J. Kishner
Hughes Danbury Optical Systems, Inc.
100 Wooster Heights Road
Danbury, CT 06810

Gerstner and Tschudi,[1] in their paper on two-wavelength interferometry, claim they first demonstrated stabilization of two semiconductor lasers by locking them to a common Fabry-Pérot resonator. They are probably unaware of the work of deGroot and Kishner[2] in which we used this technique to achieve relative stabilization of two semiconductor laser diodes, operating at wavelengths of 785 and 835 nm, to <0.014 ppm. Our application, like that of Gerstner and Tschudi, was two-wavelength interferometry.

References

1. K. Gerstner and T. Tschudi, "New diode laser light source for absolute ranging two-wavelength interferometry," *Opt. Eng.* **33**(8), 2692–2696 (1994).
2. P. deGroot and S. Kishner, "Synthetic wavelength stabilization for two-color laser diode interferometry," *Appl. Opt.* **30**(28), 4026–4033 (1991).

Response

Response to "Comment on the paper 'New diode laser light source for absolute ranging two-wavelength interferometry'"

Klaus Gerstner
Theo Tschudi
Technische Hochschule Darmstadt
Institute of Applied Physics
Hochschulstrasse 6
D-64289 Darmstadt, Germany

We agree that the central part of our work, which is the Fabry-Pérot etalon, is used in the paper of deGroot and Kishner with the title "Synthetic wavelength stabilization for two-color laser-diode interferometry" for the same purpose as in our work. Unfortunately we had no knowledge of deGroot and Kishner's contribution.

One difference between the work of deGroot and Kishner and our work, however, is that our light source shows a number of features that were only proposed in the above-mentioned paper. We use an absolute stabilization for one laser (a rubidium absorption line or another Fabry-Pérot etalon), and the resonator for the stabilization of the synthetic wavelength is sufficiently short to preserve the unambiguity of the synthetic wavelength. Consequently, we still consider it a "new light source."

Letter

November 1994 special section

Chandra Roychoudhuri
University of Connecticut
Photonics Research Center
MS 157, Room 312
260 Glenbrook Road
Storrs, Connecticut 06269-3157

The special section on micro-optics in the November 1994 issue of *Optical Engineering* was put together with the help of the following guest editorial board members:

Neil Gallagher, Purdue University, Indiana
Kenya Goto, Toshiba Corp., Japan
Hans Peter Herzig, University of Neuchatel, Switzerland
Mike Hutley, National Physical Lab., United Kingdom
Kenechi Iga, Tokyo Institute of Technology, Japan
Michael Morris, University of Rochester, New York
Edward Motamedi, Rockwell International Science Center, California
Mashiro Oikawa, Nippon Sheet Glass Co., Ltd., Japan
Vadim Veiko, St. Petersburg Fine Mechanics & Optics Institute, Russia
Wilfrid Veldkemp, MIT/Lincoln Lab., Massachusetts

It is my deep regret that due to my oversight these names did not get printed in the guest editorial. I personally apologize to all of the above members and the readers for my mistake.

I wish all of you a happy new year.

Downloaded from SPIE Digital Library on 21 Oct 2010 to 66.165.46.178. Terms of Use: http://spiedl.org/terms