
Semiconductor Lasers Stability Instability And Chaos

semiconductor lasers: stability, instability and chaos - semiconductor lasers: stability, instability and chaos junji ohtsubo faculty of engineering, shizuoka university 3-5-1 johoku, naka-ku, hamamatsu, 432-8561 japan

semiconductor lasers : stability, instability and chaos - contents 1 introduction 1 1.1 chaos and lasers 1 1.2 historical perspectives of chaos in semiconductor lasers... 3 1.3 outline of this book 7 references 9 2 chaos in laser systems 13

stability of a semiconductor laser with a dispersive ... - stability of a semiconductor laser with a dispersive extended cavity l. ramunno and j. e. sipe department of physics, university of toronto, 60 st. george street, toronto, ontario, canada m5s 1a7

optical-feedback-induced stability and instability in ... - optical-feedback-induced stability and instability in broad-area semiconductor lasers yasuihiro fujita and junji ohtsubo faculty of engineering, shizuoka university, 3-5-1 johoku, hamamatsu 432-8561.

amplitude or intensity stability in semiconductor lasers - c7-746 journal de physique iv and the excess noise (r_{in3} , 2) where r_{in} is the noise contribution factor specific to the light source, 3,, is the average photocurrent delivered by the light detector and q is the electron

high frequency stability semiconductor laser sources at ... - stability of the suprasil is really high, it is still not sufficient for the achievement of the comparable stability of the semiconductor laser to the he-ne lasers.

phase instability in semiconductor lasers - researchgate - phase instability in semiconductor lasers l. gil 1; 2 and g.l. lippi 1 institut non lin eaire de nice, universit e de nice-sophia antipolis, valbonne, france and

q-switching instability in a mode-locked semiconductor laser - q-switching instability in a mode-locked semiconductor laser dmitrii rachinskii department of applied mathematics, university college cork, ireland

frequency stabilization of optical feedback - nist - and to ensure long-term locking stability, it is useful to servo control the appropriate feedback phase and laser current relative to the reference cavity. low-speed electronic feedback circuits are sufficient to accomplish this. the actual physics that determines the spectral characteristics of semiconductor lasers is a topic of of is 12. 1987), ...

mode hopping in semiconductor lasers - newport - mode hopping in semiconductor lasers is undesirable in many applications since it introduces unwanted intensity noise. a prime example is in videodisc systems. mode hopping causes variations in the location of data written to the optical disk because dispersion causes variations in beam direction, possibly requiring the use of achromatic optics 1. in addition, the quality of the picture ...

compact stabilized semiconductor laser for frequency metrology - and frequency stability below 10⁻¹² is measured for integration time spanning from 1 s to 1 day. the architecture demonstrated in this study is suitable for realization of frequency modulatable lasers at any wavelength.

the effect of nonlinear gain on the stability of ... - the effect of nonlinear gain on the stability of evanescently coupled semiconductor laser arrays d. t. nichols and h. g. winful department of electrical engineering and computer science, university of michigan, ann arbor, michigan 48109-2122 (received 13 march 1992; accepted for publication 22 september 1992) we show that nonlinear gain saturation can enhance the stability of evanescently ...

springer series in optical sciences - semiconductor lasers and their applications, and the future perspective of this field. however, for the beginner, including graduates who intend to participate newly in this field, the book starts with an introduction and explanation of chaos in laser

tunable semiconductor lasers - larry coldren group - abstract: tunable semiconductor lasers continue to be in just about everyone's list of important components for future fiber optic networks. various designs will be overviewed with particular emphasis on the widely

influence of the nonlinear gain on the stability limit of ... - y. fan, y. yu, j. xi & h. ye, "influence of the nonlinear gain on the stability limit of a semiconductor laser with optical feedback," in proceedings of spie vol. 9267: semiconductor lasers and applications vi, 2014, pp.

external-cavity frequency-stabilization of visible and ... - semiconductor lasers for high resolution spectroscopy m.g. boshier, d. berkeland, e.a. hinds and v. sandoghdar physics department, yale university, new haven, ct 06520, usa received 3 may 1991 ; revised manuscript received 5 june 1991 we have shown that external cavity stabilization can be a straightforward and powerful technique for converting diode lasers of poor spectral quality into useful ...

stability of locking in mutually delay-coupled ... - stability of locking in mutually delay-coupled semiconductor lasers h. erzgr"abera, d. lenstra^{a,b}, and b. krauskopf^c, ^a anatuurkunde en sterrenkunde, vrije universiteit amsterdam, the netherlands

a high-stability semiconductor laser system for a 88sr ... - a high-stability semiconductor laser system for a 88sr-based optical lattice clock 19 signal for frequencies higher than 20 khz. a one-step stabi-

detailed stability map and bi-stability investigation for ... - detailed stability map and bistability investigation for injection-locked fabry-perot semiconductor lasers m. m. krstić, 1 m. l. mašanović, 2 j. v. crnjanski , l. a ...

dynamics of semiconductor lasers with bidirectional ... - dynamics of semiconductor lasers with bidirectional optoelectronic coupling: stability, route to chaos, and entrainment raúl vicente, 1, 2 shuo tang, 2 josep mulet, 1 claudio r. mirasso, 1, 2 and jia-ming liu 2

semiconductor lasers and applications - fisica - semiconductor lasers and applications laser systems & applications msc in photonics & euromphotonics cristina masoller research group on dynamics, nonlinear optics and lasers (donll)

ieee journal of quantum electronics, vol. 43, no. 11 ... - rana and george: relaxation oscillations and pulse stability in harmonically mode-locked semiconductor lasers 1111 fig. 3. amplifier gain $n = n$, normalized to the unsaturated gain (assumed to

stability analysis and synchronization of injection-

locked ... - stability analysis and synchronization of injection-locked semiconductor lasers with optical feedback yoshiro takiguchi, kohji ohyagi, and junji ohtsubo **stability and modulation properties of a semiconductor ...** - semiconductor laser with weak optical feedback 521 when the laser operates on one of the ecms with a frequency not much larger than!0,as the feedback increases a periodic or quasiperiodic modulation of the laser output appears **improved rate equations for external cavity semiconductor ...** - improved rate equations for external cavity semiconductor lasers ... and dynamic stability is consisting of a 1.3 pn bh laser diode with an ar-coated facet and a 4 mm grinrod is reported. because of its strong optical feedback, it provides a stable single mode, which is not sensitive to the environ- l i i given. an experiment on an external coupled cavity semiconductor laser 0 i i+l x fig. i ... **semiconductor lasers - toc - springer series in optical sciences 111 semiconductor lasers stability, instability and chaos** bearbeitet von junji ohtsubo 2nd, enlarged ed. softcover version of original hardcover edition 2008 2010. **semiconductor lasers stability instability and chaos 3rd ...** - read online now semiconductor lasers stability instability and chaos 3rd edition ebook pdf at our library. get semiconductor lasers stability instability and chaos 3rd edition pdf file for free from our online library **a high stability semiconductor laser system for a 88sr ...** - a high stability semiconductor laser system for a 88sr-based optical lattice clock m. g. tarallo, n. poli, m. schioppo, g. m. tino* dipartimento di fisica and lens-universit`a di firenze, **the modular system for semiconductor lasers - ppqsense** - for driving and controlling semiconductor lasers, and in particular quantum cascade lasers. qcl are among the most resource-demanding devices, in terms of voltage compliance, maximum current ratings, current noise and temperature stability. if works with qcls, it will work for any other semiconductor laser! qube cl qube cl available modules: main controller unit 0.5 a and 1 a current module ... **26 ipc conference of the ieee photonics society 31st 2018 ...** - facet stability in high power semiconductor lasers. the second sunday workshop at will discuss stable the second sunday workshop at will discuss stable single frequency lasers and frequency comb lasers. **stability analysis for the synchronization of ...** - stability analysis for the synchronization of semiconductor lasers with ultra-high frequency current modulation y. chembo kouomoua,b,p.woafoa,* a laboratoire de mécanique, faculté des sciences, université de yaoundé i, b.p. 812 yaoundé, cameroon b division of technical telecommunication studies, minpostel, yaoundé, cameroon received 22 april 2002; received in revised form 20 november ... **structure, stability properties, and nonlinear dynamics of ...** - structure, stability properties, and nonlinear dynamics of lateral modes of a broad area semiconductor laser s`ren blaaberg jensen this thesis is submitted as part of the requirements for obtaining the ph.d. **purity of the single frequency mode of a hybrid ...** - purity of the single frequency mode of a hybrid semiconductor-fiber laser mamoun wahbeh1,2,3* and raman kashyap1,2,3,4 1department of electrical engineering, École polytechnique de montréal, montreal, h3t 1j4, qc, canada **optically pumped semiconductor lasers for atomic and ...** - optically pumped semiconductor lasers for atomic and molecular physics s. burd a,b, d. leibfried a,a.c.wilsona and d. j. wineland a a national institute of standards and technology, 325 broadway, boulder co, usa **semiconductor lasers - readingsample - springer series in optical sciences 111 semiconductor lasers stability, instability and chaos** bearbeitet von junji ohtsubo 2nd, enlarged ed. softcover version of original hardcover edition 2008 2010. **938 ieee journal of quantum electronics, vol. 44, no. 10 ...** - numerical study of a dfb semiconductor laser and laser array with chirped structure based on the equivalent chirp technology yitang dai and jianping yao, senior member, ieee abstract—we propose that a bragg grating with a chirp profile in a semiconductor distributed feedback (dfb) laser can be designed and fabricated through nonuniform sampling of a uni-form grating based on the equivalent ... **optimization and stability boundaries for the ...** - optimization and stability boundaries for the synchronization of semiconductor lasers with external optical feedback y. chembo kouomou1,2 and p. woafo1,* **compact tunable khz-linewidth semiconductor laser ...** - the laser and the resonator are mounted on separate thermal control elements, and the long term stability of the laser is limited by residual temperature variations of the resonator. **stability of the nonlinear dynamics of an optically ...** - semiconductor lasers such as on-wafer testing capabilities, reduced manufacturing costs, high coupling efficiency to optical fibers, ease of integration into 2d arrays and low threshold currents [26]. **semiconductor lasers brief - physics@ncku - bibliography** • salehandteich,fundamentals of photonics (wiley) • j.ohtsubo,semiconductor lasers: stability, instability and chaos (springer) • j.mu,photonic devices (cambridgeuniversitypress) **semiconductor lasers - university at buffalo** - semiconductor lasers lasers are oscillators. just like electronic oscillators, amplification and positive feedback are needed to make laser work. the amplifier in a laser is the gain medium. via electrical current injection, plasma excitation, or pumping by another laser, energy gets stored in the gain medium. it is converted to light via photon generation. two mechanisms play important roles ... **high brightness semiconductor lasers as transmitters for ...** - tapered semiconductor lasers [1-4], also known as flared unstable cavity lasers, have demonstrated both high power and good beam quality at different wavelengths. **semiconductor laser sources at 760 nm wavelength for ...** - stability of the suprasil is really high, it is still not sufficient for the achievement of the comparable stability of the semiconductor laser to the he-ne lasers. **a study on temperature control of semiconductor lasers ...** - temperature must be controlled very precisely so that semiconductor lasers can work properly. a new temperature control a new temperature control algorithm is presented in this paper

based on fuzzy-smith control which combines fuzzy pid control with the smith predictor. **trends in semiconductor laser design - stony brook** - 1 trends in semiconductor laser design: balance between leakage, gain and loss in ingaasp/inp mqw structures. g. belenky, l. shterengas state university of new york at stony brook, stony brook, ny 11794 usa **semiconductor lasers - rice university** - semiconductor lasers • optical processes in semiconductors • absorption, gain, and pumping • types of semiconductor lasers university of neuchatel, switz. **characterization of the stability of semiconductor lasers ...** - we report a numerical characterization of the stability of semiconductor lasers with delayed feedback under the simultaneous variation of the delay time τ and the pump current p . changes in **stability diagrams for continuous wide-range control of ...** - chaos-based communications using semiconductor lasers subject to feedback v z tronciu, claudio r mirasso and pere colet stability and modulation properties of a semiconductor laser with weak optical feedback from a

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