

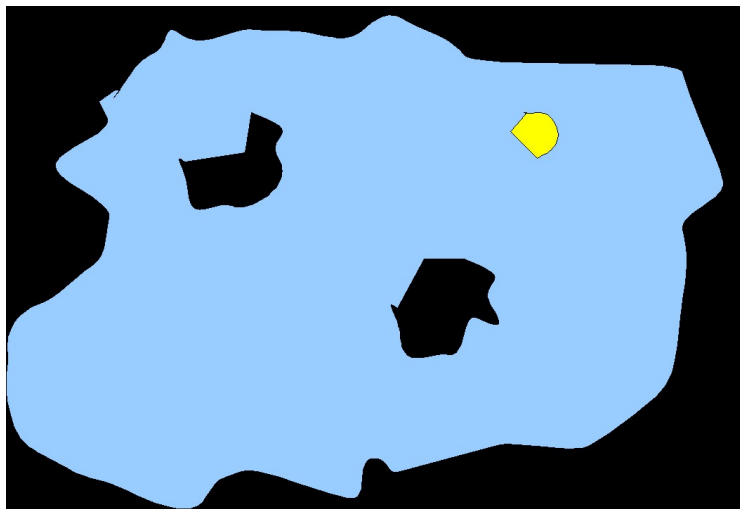
Badatelská komunikace

Vojtěch Svoboda

October 4, 2016

(hrubá zkratka)

Hranice lidského poznání



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Poslední Nobelovy ceny za fyziku

The screenshot shows the Nobelprize.org website. The main heading is "The Nobel Prize in Physics 2016" awarded to David J. Thouless, F. Duncan M. Haldane, and J. Michael Kosterlitz. The page includes a "LIVE Video" section for the 2016 Nobel Prize Announcements, a "2016 NOBEL PRIZE ANNOUNCEMENTS Full schedule" section, and a "2016 PHYSICS PRIZE QUESTION: Have you ever heard of topological materials?" with "Yes" and "No" options. The left sidebar contains navigation links for "Nobel Prizes and Laureates", "Physics Prizes", and "About the Nobel Prize in Physics 2016".

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- Guru
- Kouzelník

Outline

1 Úvod

2 Vědecký článek

3 Konference

Co obnáší badatelská práce

- Bádání.
- Psaní žádostí o granty.
- Nemůže mít klapky na očích.
- Starost o dorost, výuka.
- Byrokracie (bohužel).
- Prezentování, publikování (konference, články, monografie).
- Oponentská práce.
- Neustálé "keep to date", rešerše.

"Publish or perish" či "Publikuj, nebo se pakuj"

Science citation index

- Články v časopisech.
- Vystoupení na konferenci.
- Publikační životopis.
- Citační životopis.

Komunikace

Outline

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3 Konference

G Model

HESON-8751; No. of Pages 7

ARTICLE IN PRESS

Fusion Engineering and Design xxx (2016) xxx–xxx



ELSEVIER

Contents lists available at ScienceDirect

Fusion Engineering and Design

journal homepage: www.elsevier.com/locate/fusengdes

Remote operation of the GOLEM tokamak for Fusion Education

O. Grover^a, J. Kocman^a, M. Odstrčil^c, T. Odstrčil^c, M. Matusu^a, J. Stöckel^{a,b}, V. Svoboda^{a,*},
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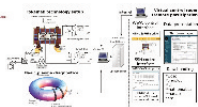
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HIGHLIGHTS

- The remote operation of the tokamak GOLEM for educational purposes.

GRAPHICAL ABSTRACT



ARTICLE INFO

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Tokamak technology

Remote participation

Education

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ABSTRACT

Practically oriented education in the field of thermonuclear fusion is highly requested. However, the high complexity of appropriate experiments makes it difficult to develop and maintain laboratories where students can take part in hands-on experiments in this field of study. One possible solution is to establish centres with specific high temperature plasma experiments where students can visit such a laboratory and perform their experiments in-situ. With the advancements of IT technologies it naturally follows to make a step forward and connect these with necessary plasma physics technologies and thus allow to access even sophisticated experiments remotely. Tokamak GOLEM is a small, modest device with its infrastructure linked to web technologies allowing students to set-up necessary discharge parameters, submit them into a queue and within minutes obtain the results in the form of a discharge logpage.

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Publikace - jiná liga

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1. **Hawking SW**, Hertog T
Populating the landscape: A top-down approach
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Times Cited: 5
2. **Hawking SW**
Information loss in black holes
PHYSICAL REVIEW D 72 (8): Art. No. 084013 OCT 2005
Times Cited: 30
3. **Hawking SW**, Hertog T
Why does inflation start at the top of the hill?
PHYSICAL REVIEW D 66 (12): Art. No. 123509 DEC 15 2002
Times Cited: 16
4. **Hawking SW**, Hertog T, Reall HS
Trace anomaly driven inflation
PHYSICAL REVIEW D 63 (8): Art. No. 083504 APR 15 2001
Times Cited: 50
5. **Hawking SW**, Hertog T, Reall HS
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PHYSICAL REVIEW D **73**, 123527 (2006)

Populating the landscape: A top-down approach

S. W. Hawking¹ and Thomas Hertog²

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²*Physics Department, Theory Division, CERN, CH-1211 Geneva 23, Switzerland*

(Received 20 February 2006; published 23 June 2006)

We put forward a framework for cosmology that combines the string landscape with no boundary initial conditions. In this framework, amplitudes for alternative histories for the universe are calculated with final boundary conditions only. This leads to a top-down approach to cosmology, in which the histories of the universe depend on the precise question asked. We study the observational consequences of no boundary initial conditions on the landscape, and outline a scheme to test the theory. This is illustrated in a simple model landscape that admits several alternative inflationary histories for the universe. Only a few of the possible vacua in the landscape will be populated. We also discuss in what respect the top-down approach differs from other approaches to cosmology in the string landscape, like eternal inflation.

DOI: 10.1103/PhysRevD.73.123527

PACS numbers: 98.80.Qc, 11.25.-w, 98.80.Cq

I. INTRODUCTION

It seems likely that string theory contains a vast ensemble of stable and metastable vacua, including some with a small positive effective cosmological constant [1] and the low energy effective field theory of the standard model. Recent progress on the construction of metastable de Sitter vacua [2] lends further support to the notion of a string landscape [3], and a statistical analysis gives an idea of the distribution of some properties among the vacua [4]. But it has remained unclear what is the correct framework for cosmology in the string landscape. There are good reasons to believe, however, that a proper understanding of the cosmological dynamics will be essential for the landscape to be predictive [5].

In particle physics, one usually computes S-matrix ele-

ments, and there is certainly no opportunity for observing multiple copies of the universe.

In fact if one does adopt a bottom-up approach to cosmology, one is immediately led to an essentially classical framework, in which one loses all ability to explain cosmology's central question—why our universe is the way it is. In particular a bottom-up approach to cosmology either requires one to postulate an initial state of the universe that is carefully fine-tuned [10]—as if prescribed by an outside agency—or it requires one to invoke the notion of eternal inflation [11], which prevents one from predicting what a typical observer would see.

Here we put forward a different approach to cosmology in the string landscape, based not on the classical idea of a single history for the universe but on the quantum sum over

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Trace anomaly driven inflation
Hawking SW, Hertog T, Reall HS
PHYSICAL REVIEW D
63 (8): Art. No. 083504 APR 15 2001

Document type: Article **Language:** English **Cited References:** 56 **Times Cited:** 33 [FIND RELATED RECORDS](#) [Explanation](#)

Abstract:
This paper investigates Starobinsky's model of inflation driven by the trace anomaly of conformally coupled matter fields. This model does not suffer from the problem of contrived initial conditions that occurs in most models of inflation driven by a scalar field. The universe can be nucleated semiclassically by a cosmological instanton that is much larger than the Planck scale provided there are sufficiently many matter fields. There are two cosmological instantons: the four sphere and a new "double bubble" solution. This paper considers a universe nucleated by the four sphere. The AdS/CFT correspondence is used to calculate the correlation function for scalar and tensor metric perturbations during the ensuing de Sitter phase. The analytic structure of the scalar and tensor propagators is discussed in detail. Observational constraints on the model are discussed. Quantum loops of matter fields are shown to strongly suppress shea scale metric perturbations, which implies that short distance modifications of gravity would probably not be observable in the cosmic microwave background. This is probably true for any model of inflation provided there are sufficiently many matter fields. This point is illustrated by a comparison of anomaly driven inflation in four dimensions and in a Randall-Sundrum brane-world model.

KeyWords Plus:
ENERGY-MOMENTUM TENSOR, BRANE-WORLD COSMOLOGY, EARLY UNIVERSE, GRAVITY, ADS, PERTURBATIONS, INSTANTONS, FLATNESS, HORIZON, SPACE

Citační analýza

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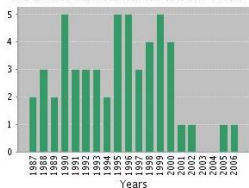
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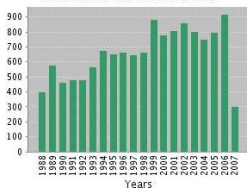
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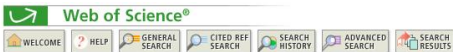
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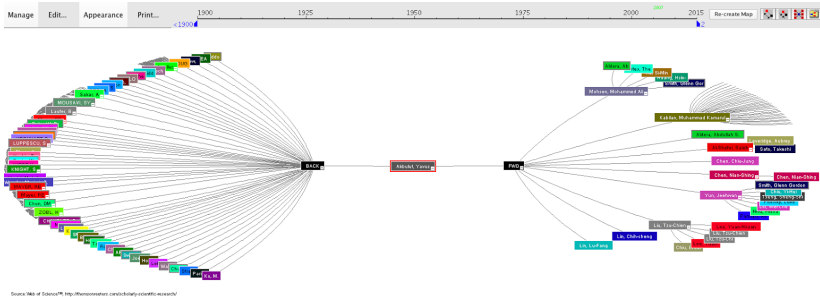
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<input checked="" type="checkbox"/>	Abdul, Yasar	2007: INSTRUCTIONAL SCIENCES	Effects of multimedia annotat...
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Publication Year	2014
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Source Abbreviation	J EDUC COMPUT RES
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Outline

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Vykomunikovat třeba až 1000 příspěvků ..

Program conference

Time	Monday June 17th	Tuesday June 18th	Wednesday June 19th	Thursday June 20th	Friday June 21st	
8h30						
9h	Opening session	I-2.01 D.Pesme	I-3.01 M.L.Watkins	I-4.01 G.Morfill	O-5.01 H.Henriksson O-5.02 K.D.Zastrow	
10h	Hannes Alfvén Prize lecture coffee	I-2.02 A.Sips I-2.03 J.-M.Moret coffee	I-3.02 R.Jaenicke I-3.03 B.Rus coffee	I-4.02 L.N.Vyacheslavov I-4.03 V.E.Semenov coffee	O-5.03 A.Stäbler O-5.04 G.T.Huysmans O-5.05 J.Candy coffee	
11h	I-1.01 H.Lesch I-1.02 P.Muggli	I-2.04 M.Roth I-2.05 R.Kodama	I-3.04 J.T.Mendonça I-3.05 K.Krushelnick	I-4.04 W.Dorland I-4.05 E.Ascasibar	O-5.06 I.Nunes O-5.07 M.v.Hellermann O-5.08 B.E.Chapman O-5.09 Y.V.Yakovenko	
12h	I-1.03 B.Sautic	I-2.06 I.Cook	I-3.06 P.Helander	I-4.06 H.Summers		
13h	lunch	lunch	lunch	lunch	lunch	
14h	I-1.04 G.Counsell I-1.05 T.Fukuda	I-2.07 T.Donné I-2.08 A.Fasoli	departure 13h30 Montreux station	I-4.07 M.Okabayashi I-4.08 W.A.Cooper	I-5.01 U.Schramm I-5.02 F.Porcelli	
15h	O-1.01 S.Jachmich O-1.02 S.V.Lebedev O-1.03 V.Krivenski O-1.04 C.Castaldo	O-2.01 P.Lotte O-2.02 M.J.Hole O-2.03 J.Stöckel O-2.04 P.R.Thomas	Excursion	O-4.01 E.Poli O-4.02 A.D.Turnbull O-4.03 S.Coda O-4.04 Voitsekhovitch	I-5.03 D.D.Ryutov	
16h	coffee O-1.05 J.Decker O-1.06 F.Sardei	coffee O-2.05 B.Goncalves O-2.06 H.W.Müller		Edge, SOL, and Divertor Plasma Turbulence and Transport	coffee O-4.05 Krasheninnikov O-4.06 A.Bers	Closing session
17h	O-1.07 B.Esposito O-1.08 V.E.Fortov O-1.09 T.Estrada	O-2.07 G.Martin O-2.08 M.R.Wade O-2.09 D.A.Gates		return 19h00 Montreux station	coffee O-4.07 B.Coppi O-4.08 M.Krämer O-4.09 N.N.	
18h						
19h	18h30 Montreux Pier Reception Steamer "Lausanne"	Evening session 18h00 - 20h00 Prof. Ian Fells Clean and Secure Energy for the 21st Century ?		18h30 departure for Gala Dinner		



Programme of the 29th EPS Conference on Plasma Physics and Controlled Fusion, Montreux, 2002 status : May 30!

Posterová sekce



kredit: ČVUT workshop 2000

J 04/98:21000022

Mode-locking of Flashlamp Pumped Nd:YAP Laser Using Solid-State Saturable Absorbers

Václav Kuběšek, Andrej Dombrovský, Jens Biegert, Jean-Claude Diels,
Kevin Malloy, Andreas Schlitz, Karel Blažek and Karel Hejzlschab

*Czech Technical University, Faculty of Nuclear Sciences and Physical Engineering, Břichová 7, 115 19 Prague 1, Czech Republic
 †The University of New Mexico, Department of Physics and Astronomy and Center for High Technology Materials, 800 Yale Blvd NE, Albuquerque, NM 87131, USA
 ‡Crystal Ltd., Palackého 118, 521 01 Tábor, Czech Republic

Abstract: We report on frequency-stable, high-power operation of a Nd:YAP laser pumped by a flashlamp. The laser is mode-locked using a saturable absorber (SA) and a phase-locked loop (PLL) system. The laser output is characterized by a narrow linewidth and a high repetition rate. The laser is suitable for applications in the field of ultrafast laser technology.

Keywords: Nd:YAP laser, mode-locking, saturable absorber, PLL, flashlamp pumping.

Problems: The laser is pumped by a flashlamp, which has a high repetition rate and a high pulse energy. The laser output is characterized by a narrow linewidth and a high repetition rate. The laser is suitable for applications in the field of ultrafast laser technology.

Possible solutions: The laser is mode-locked using a saturable absorber (SA) and a phase-locked loop (PLL) system. The laser output is characterized by a narrow linewidth and a high repetition rate. The laser is suitable for applications in the field of ultrafast laser technology.

Our samples: The laser is pumped by a flashlamp, which has a high repetition rate and a high pulse energy. The laser output is characterized by a narrow linewidth and a high repetition rate. The laser is suitable for applications in the field of ultrafast laser technology.

References: [1] V. Kuběšek et al., Opt. Lett. 31, 1234 (2006). [2] J. Biegert et al., Opt. Lett. 31, 1234 (2006). [3] K. Blažek et al., Opt. Lett. 31, 1234 (2006).

Authors' addresses: Václav Kuběšek, Faculty of Nuclear Sciences and Physical Engineering, Břichová 7, 115 19 Prague 1, Czech Republic. E-mail: kubesek@fd.cvut.cz

Keywords: Nd:YAP laser, mode-locking, saturable absorber, PLL, flashlamp pumping.

References: [1] V. Kuběšek et al., Opt. Lett. 31, 1234 (2006). [2] J. Biegert et al., Opt. Lett. 31, 1234 (2006). [3] K. Blažek et al., Opt. Lett. 31, 1234 (2006).

Authors' addresses: Václav Kuběšek, Faculty of Nuclear Sciences and Physical Engineering, Břichová 7, 115 19 Prague 1, Czech Republic. E-mail: kubesek@fd.cvut.cz

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- Konference.
- Proceedings.

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- Celoroční práce.
- Přihlášení sebe a příspěvku na konferenci.
- Sepsání jednostránkového abstraktu.
- 4-stránkový proceeding.
- Sestavení prezentace či posteru.
- Odprezentování.

Kýžený závěr

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title="An assesment of theoretical models based on observations in the JET tokamak",  
author="F. Tibone and J.W. Connor and T.E. Stringer and H.R. Wilson",  
journal="Plasma Phys. and Control. Fusion",  
year="1994",  
volume="36",  
number="",  
publisher="Institute of Physics publishing",  
address="",  
pages="473-512",  
}
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