

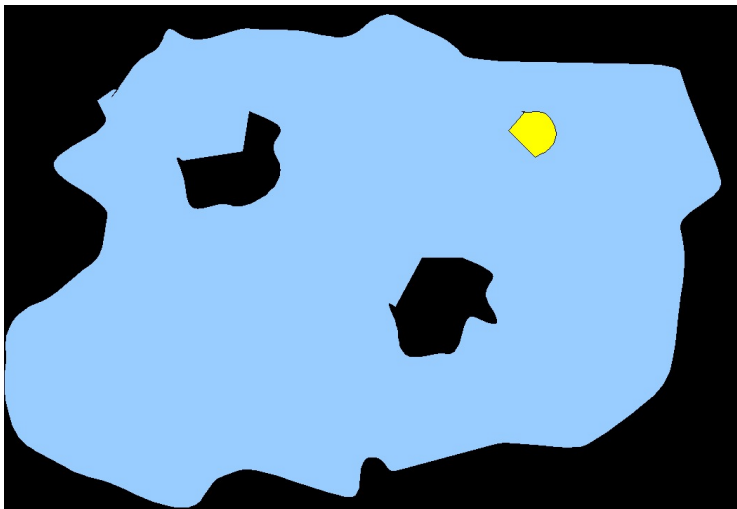
Badatelská komunikace

Vojtěch Svoboda

September 23, 2020

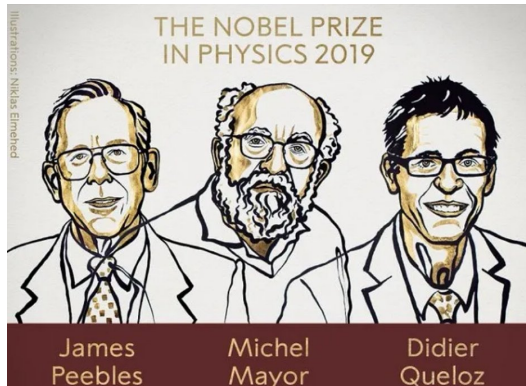
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Hranice lidského poznání



kredit: [V. Svoboda, 2020]

Poslední Nobelovy ceny za fyziku



kredit: [The Nobel Foundation, 2020]

- Zelenáč
- Začátečník
- Novice
- Středně pokročilý
- Pokročilý
- Vědec
- Guru
- Kouzelník

Cesta je dlouhá

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

1 Úvod

2 Vědecký článek

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/fuseengdes

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,*},
G. Vondrasek^a, J. Zará^d

^a Faculty of Nuclear Sciences and Physical Engineering CTU Prague, CZ-115 19, Czech Republic

^b Institute of Plasma Physics AS CR, Prague CZ-182 21, Czech Republic

^c University of Southampton, Southampton SO17 1BJ, UK

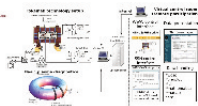
^d Faculty of Electrical Engineering CTU Prague, CZ-166 27, Czech Republic

^e Max-Planck-Institut für Hochphysik, D-85748 Garching, Germany

HIGHLIGHTS

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

GRAPHICAL ABSTRACT



ARTICLE INFO

Article history:

Received 19 June 2015

Received in revised form 26 February 2016

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Available online xxx

Keywords:

Tokamak technology

Remote participation

Education

Nuclear fusion

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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1. **Hawking SW, Hertog T**
Populating the landscape: A top-down approach
PHYSICAL REVIEW D 73 (12): Art. No. 123527 JUN 2006
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: 58
5. **Hawking SW, Hertog T, Reall HS**
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PHYSICAL REVIEW D 62 (4): Art. No. 043501 AUG 15 2000
Times Cited: 154

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PHYSICAL REVIEW D **73**, 123527 (2006)

Populating the landscape: A top-down approach

S. W. Hawking¹ and Thomas Hertog²

¹*DAMTP, University of Cambridge, Wilberforce Road, Cambridge CB3 0WA, UK*

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

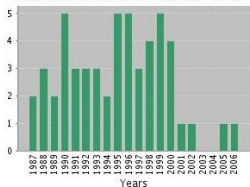


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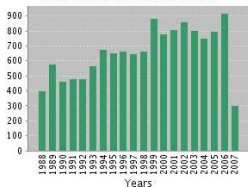
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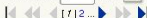
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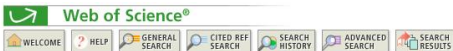
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Reference na článek



Citing Articles--Summary

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COMMUNICATIONS IN MATHEMATICAL PHYSICS
43 (3): 199-220 1975

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- 1. Lee JW, Oh S, Kim J
Quantum separability of thermal spin one boson systems
PHYSICS LETTERS A 363 (5-6): 374-377 APR 9 2007
Times Cited: 0

- 2. Li GQ
Tunneling radiation of a Gibbons-Maeda dilaton black hole
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Times Cited: 0

- 3. Park MI
Thermodynamics of exotic black holes, negative temperature, and Bekenstein-Hawking entropy
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Times Cited: 0

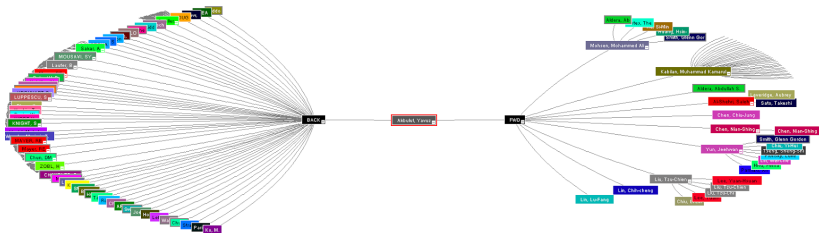
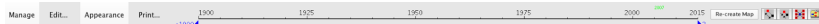
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<input checked="" type="checkbox"/> JALSTEIN JH	(year unknown)-IN PRESS 2 LANGUAGE	(article title not available)	
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Outline

1 Úvod

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3 Konference



kredit: [Google, 2020]

- Pozvané přednášky
- Shrnující přednášky
- Klasické přednášky
- Posterové sekce
- ... welcome party, doprovodný pr., farw. party, satelitní workshopy

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.Krivinski 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 Director 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	coffee O-2.07 G.Martin O-2.08 M.R.Wade O-2.09 D.A.Gates		return 19h00 Montreux station	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



FXZ 20

J 04/98:21000022

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

Vaclav Kubicek¹, Andrej Dombrovsky², Jens Biegert³, Jean-Claude Diels³, Kevin Malloy³, Andreas Schlitz³, Karel Blazek¹ and Karel Nejedly¹

¹ Czech Technical University, Faculty of Nuclear Sciences and Physical Engineering, Břichová 7, 115 19 Prague 1, Czech Republic.
² The University of New Mexico, Department of Physics and Astronomy and Center for High Technology Materials, 800 Yale Blvd NE, Albuquerque, NM 87131, USA.
³ Crystal L3, Palo Alto, CA 94303, USA.

Abstract: We report on frequency-stable, high-contrast, narrow-linewidth, single-longitudinal-mode Nd:YAP laser operation at 1.078 μm using a saturable absorber. The laser is mode-locked using a saturable absorber and a saturable absorber. The laser is mode-locked using a saturable absorber and a saturable absorber. The laser is mode-locked using a saturable absorber and a saturable absorber.

Problems: Laser operation requires high contrast and narrow linewidth. The laser is mode-locked using a saturable absorber and a saturable absorber. The laser is mode-locked using a saturable absorber and a saturable absorber.

Possible solutions: The laser is mode-locked using a saturable absorber and a saturable absorber. The laser is mode-locked using a saturable absorber and a saturable absorber.

Our samples: The laser is mode-locked using a saturable absorber and a saturable absorber. The laser is mode-locked using a saturable absorber and a saturable absorber.

References: The laser is mode-locked using a saturable absorber and a saturable absorber. The laser is mode-locked using a saturable absorber and a saturable absorber.

Keywords: The laser is mode-locked using a saturable absorber and a saturable absorber. The laser is mode-locked using a saturable absorber and a saturable absorber.

Address: CONTACTS: The laser is mode-locked using a saturable absorber and a saturable absorber. The laser is mode-locked using a saturable absorber and a saturable absorber.

ACKNOWLEDGMENTS: The laser is mode-locked using a saturable absorber and a saturable absorber. The laser is mode-locked using a saturable absorber and a saturable absorber.

kredit: ČVUT workshop 2000

- Nástěnka v určený čas.
- Být v daný čas přítomen

LOC:

- Sehnat magnety.
- First announcement + Call for papers.
- Second announcement.
- Book of abstracts.
- Konference.
- Proceedings.

AUTOR:

- 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",  
}
```

kredit: [V. Svoboda, 2020]

Role chairperson



• kredit: [SOFT, 2016]

Komunikovat všemi směry ..



Clarivate (2020).

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[Online; accessed September 23, 2020].



CTU (2011).

Semináře workshop Čvut.

[Online; accessed September 23, 2020].



EPS PPCF conference (2002).

Plasma physics and controlled fusion conference montreux.

[Online; accessed September 23, 2020].



Google (2020).

Images.

[Online; accessed September 23, 2020].



Hawking, S. W. and Hertog, T. (2006).

Populating the landscape: A top-down approach.

Phys. Rev. D, 73:123527.



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[Online; accessed September 23, 2020].



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[Online; accessed September 23, 2020].



V. Svoboda (2020).

Miscellaneous.



Ústřední knihovna ČVUT (2020).

Web of science.
[Online; accessed September 23, 2020].