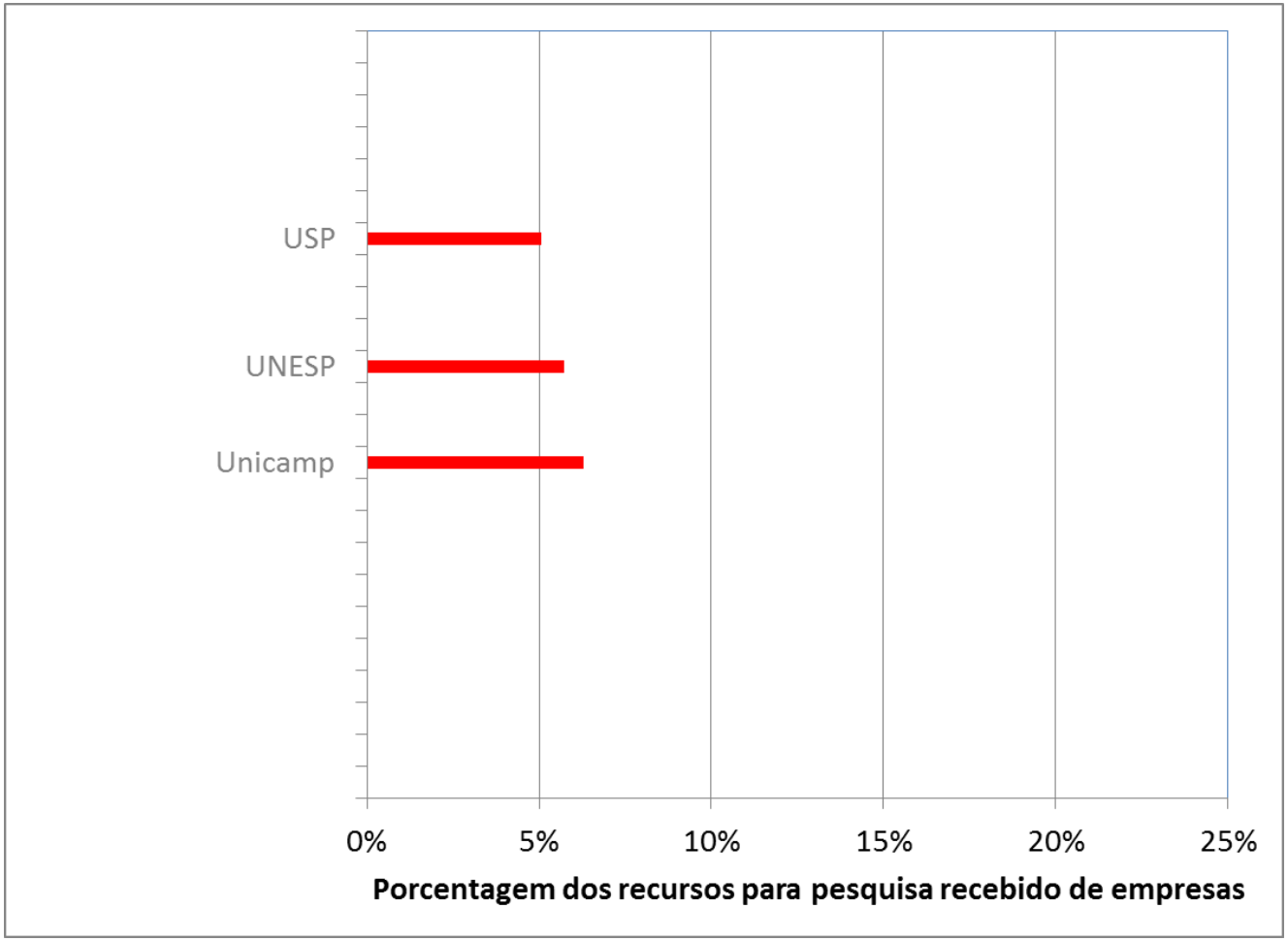
Three miths in eleven slides

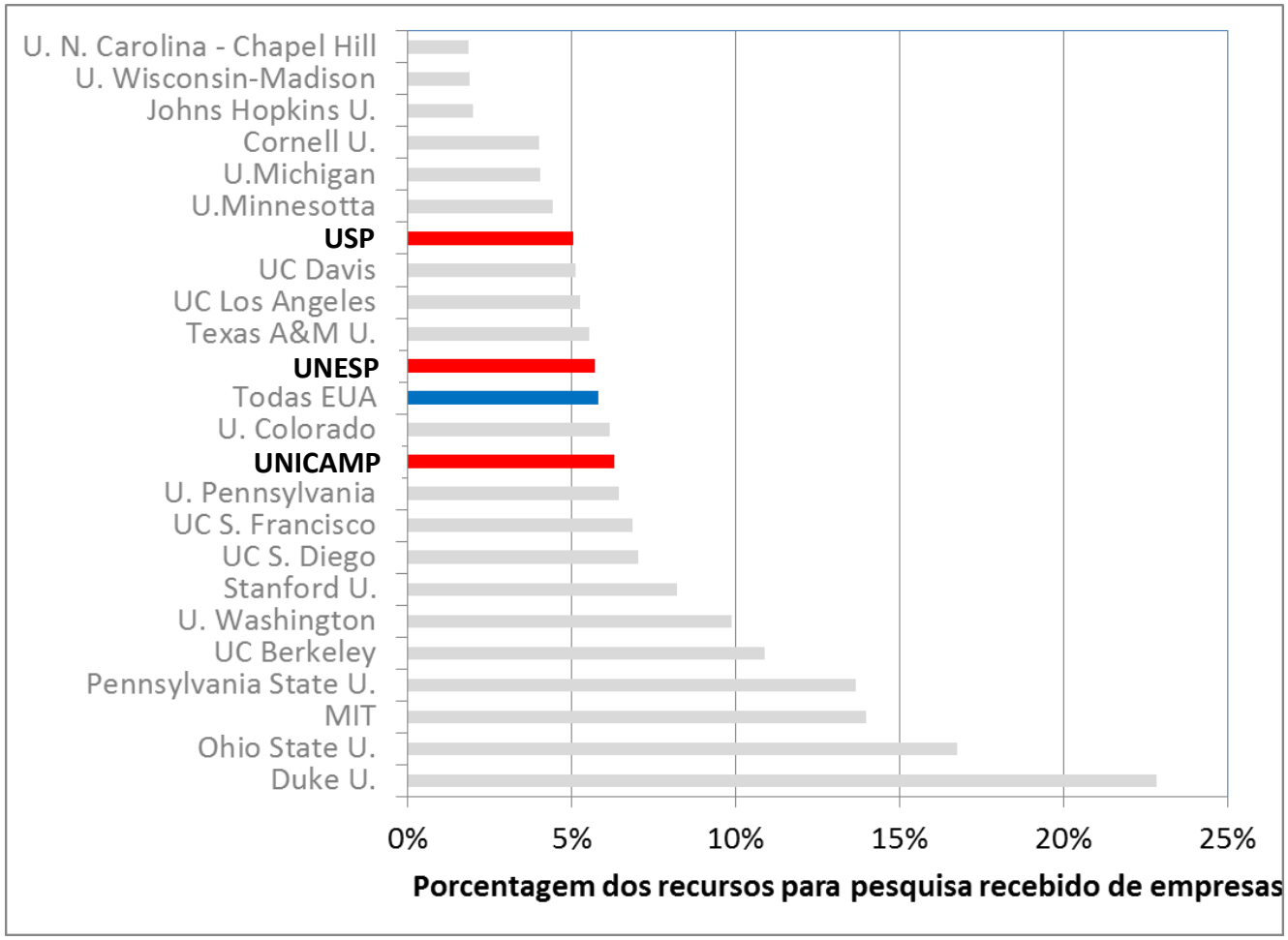
- Mith 1: business-university interaction is weak in Brazil
- Myth 2: Business-university collaborative research is short-term and does not lead to relevant scientific results
- Myth 3: universities in Brazil do not generate start-up companies

MYTH 1: BUSINESS-UNIVERSITY INTERACTION IS WEAK

% R&D income from business: USP, UNESP, Unicamp .....



% R&D income: USP, UNESP, Unicamp e EUA



MYTH 2: BUSINESS-UNIVERSITY COLLABORATIVE RESEARCH IS SHORT-TERM AND DOES NOT LEAD TO RELEVANT SCIENTIFIC RESULTS

FAPESP-Industry-University Engineering Research Centers

- Center is hosted in a university, PI a professor
  - Adjunct Director is a researcher from the company as a visiting professor at the university
  - Other company researchers as visiting professor are more than welcome
- 10 year contract; R$ 2 – 6 million per year from FAPESP and Company, plus labor costs by university
  - Typical proportion: FAPESP:Industry:University - 1:1:2
- Five centers started
  - Peugeot-Citroen (PCBA)
    - Biofuel Engines Engineering Research Center; hosted at Unicamp (incl. ITA, USP, Mauá); PCBA+FAPESP - R$ 16 million + in-kind by host univ. (est. R$ 16 million)
  - GSK
    - Engineering Research Center on Sustainable Chemistry; R$ 32 million + in-kind by host university
    - Engineering Research Center on Target Discovery; R$ 32 million + in-kind by host university
  - Natura: Applied Research Center on Well-being and Human behavior
    - R$ 20 million + in-kind by host university
  - BG: ERC on Oil and Gas
    - R$ 100 million total (Fapesp-Shell-USP, IMT, FEI)

Centros de Pesquisa Aplicada FAPESP-Empresa-Universidade

Centro	Empresa/ Univ ou Inst. Pq.	Valores contratados
Centro de Pesquisa em Engenharia sobre Motores a Biocombustível	Peugeot-Citroen Unicamp e outras	FAPESP: R$ 8 M PCBA: R$ 8 M Unicamp+: R$ 16 M
Centro de Pesquisa em Engenharia sobre Química Verde	GSK Ufscar e outras	FAPESP: R$ 5 M GSK: R$ 5,5 M Ufscar+: R$ 20 M
Centro de Pesquisa em Engenharia sobre Descoberta de Moléculas Alvo de Origem Natural para Drogas	GSK Inst. Butantan	FAPESP: R$ 13 M GSK: R$ 11 M Inst. Butantan: R$ 33 M
Centro de Pesquisa em Engenharia sobre Gás Natural	British Gas Poli, USP e outras	FAPESP: R$ 27 M BG: R$ 30 M USP+: R$ 43
Centro de Pesquisa Aplicada sobre Bem Estar Humano	Natura Inst. Psicologia, USP+	FAPESP: R$ 10 M Empresas: R$ 10 M Univ/Inst.: R$ 20 M

Biologia Molecular Avançada para Saúde e Agricultura

Supported by:

02/25/2015 09h47

Latin America's first kinase laboratory

Center located at Unicamp involves an investment of R$ 18 million from Fapesp

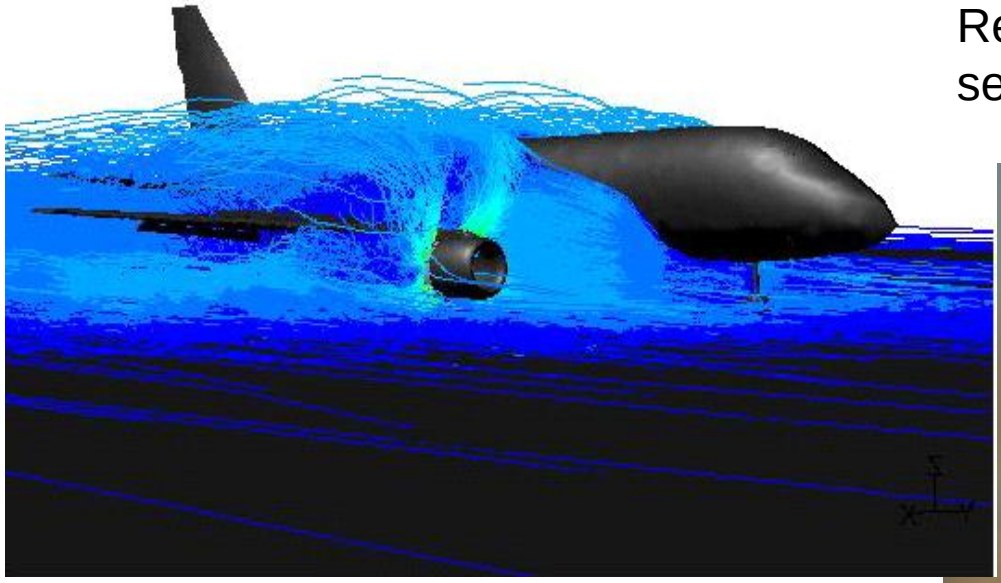
Unicamp

On March 10, Unicamp will launch the first research center of biology in Latin America (LA) in the area of protein kinases, molecules that are highly required in the pharmaceutical industry due to their signaling characteristics and the regulation of important biological processes. The laboratory, called Biology Center in Protein Kinase, relies on the partnership with São Paulo Research Foundation (Fapesp) and the Structural Genomics Consortium (SGC).

Embraer-FAPESP: R&D to build an innovative jet

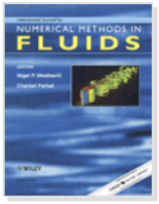
Computational Fluid Dynamics (CFD) simulation and tests

Research co-funded by FAPESP, involving several universities



Aerodynamics, Computational Fuidodynamics

International Journal for Numerical Methods in Fluids *Explore this journal >*



View issue TOC
Volume 45, Issue
10 August 200
Pages 1107–11

Research Article

Adaptive mesh refinement and coarsening for aerodynamic flow simulations

Leonardo Costa Scalabrin, João Luiz F. Azevedo

First published: 14 May 2004 Full publication history

DOI: 10.1002/fld.731 View/save citation

Cited by: 3 articles Refresh Citing literature

Funding Information

Abstract

A new mesh refinement technique for unstructured grids is discussed. The new technique presents the important advantage of maintaining the original grid skewness, thanks to the capability of handling hanging nodes. The paper also presents an interpretation of MacCormack's method in an unstructured grid context. Results for a transonic convergent –divergent nozzle, for a convergent nozzle with a supersonic entrance and for transonic flow over a NACA 0012 airfoil are presented and discussed. Copyright © 2004 John Wiley & Sons, Ltd.

Navier–Stokes-Based Study into Linearity in Transonic Flow for Flutter Analysis

Roberto G. A. Silva,* Olympio A. F. Mello,†
and João L. F. Azevedo‡
Centro Técnico Aeroespacial,
12228-904 São José dos Campos SP, Brazil

Introduction

IT has been known for quite some time[1] that transonic flow conditions are critical for flutter, with the flutter dynamic pressure being substantially reduced for Mach numbers near unity, in a phenomenon usually termed as "transonic dip."[2] The severity of flut-

Higher productivity sugarcane: 84 → 148 → 212 → 381 ton/Ha??

Plant Biotechnology Journal

Plant Biotechnology Journal (2010) **8**, pp. 263–276 doi: 10.1111/j.1467-7652.2009.00491.x

Review article

Sugarcane for bioenergy production: an assessment of yield and regulation of sucrose content

Alessandro J. Waclawovsky[1,†,‡], Paloma M. Sato[1,‡], Carolina G. Lembke[1], Paul H. Moore[2] and Glaucia M. Souza[1,*]

[1]*Departamento de Bioquímica, Instituto de Química, Av. Prof. Lineu Prestes, São Paulo, Brazil*
[2]*Hawaii Agriculture Research Center, Kunia, HI, USA*

Table 1 Average, maximum and theoretical sugarcane yields (Australia, Colombia, and South Africa) and total dry matter production

	Cane yield	Biomass*	
Type of yield	t/(ha yr)	t/(ha yr)	g/(m^2 d)
Commercial Average	84	39	10.7
Commercial maximum	148	69	18.8
Experimental maximum	212	98	27.0
Theoretical maximum	381	177	48.5

Redução de emissões de gases de efeito estufa

Goldemberg J et al., "Energy Balance for Ethyl Alcohol Production from Crops", Science 201 p. 903-906 (1978)

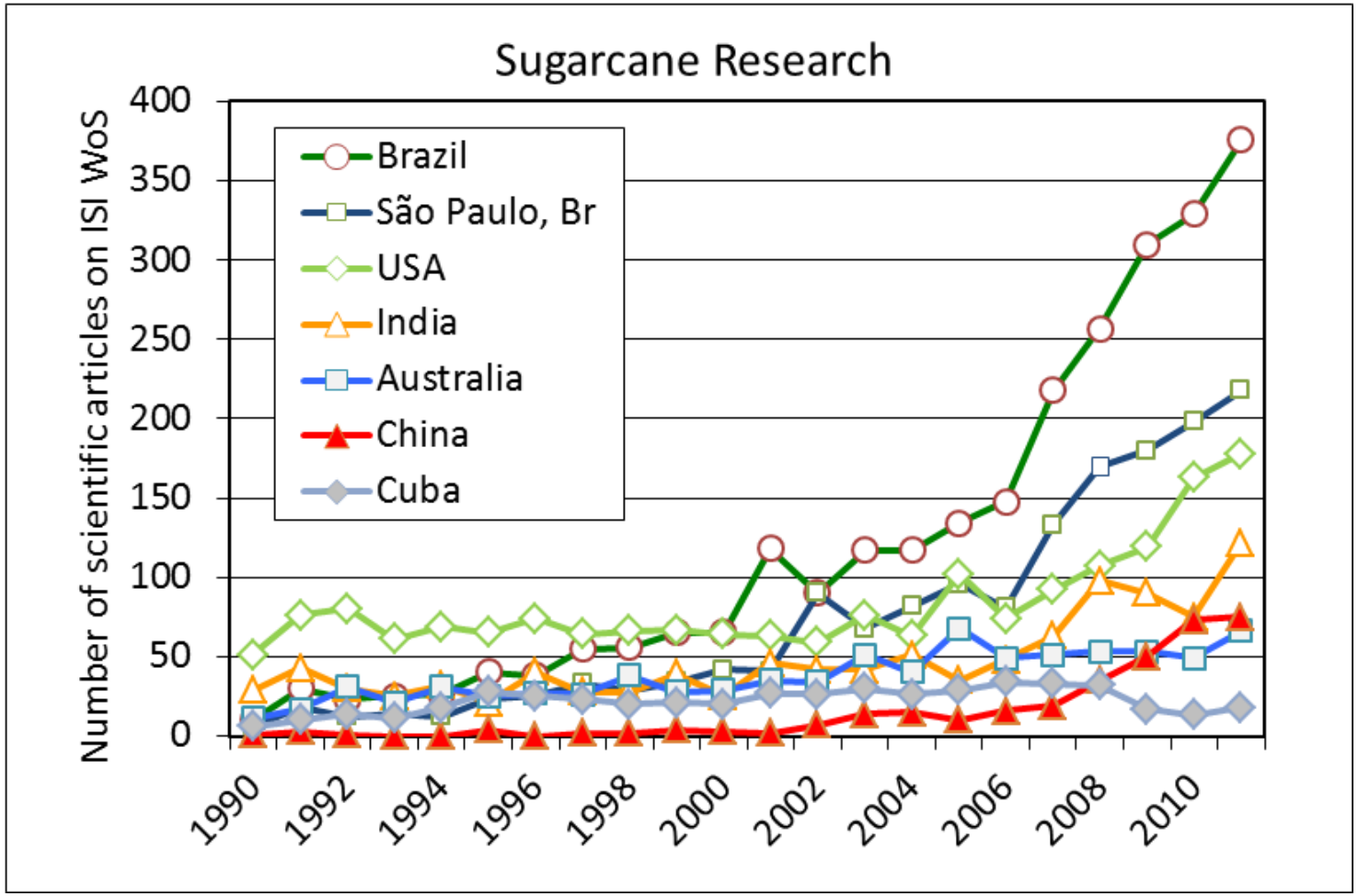
Macedo IC, Seabra JEA, Silva JEAR. Green house gases emissions in the production and use of ethanol from sugarcane in Brazil: The.... Biomass and Bioenergy (2008), doi:10.1016/j.biombioe.2007.12.006

Green house gases emissions in the production and use of ethanol from sugarcane in Brazil: The 2005/2006 averages and a prediction for 2020

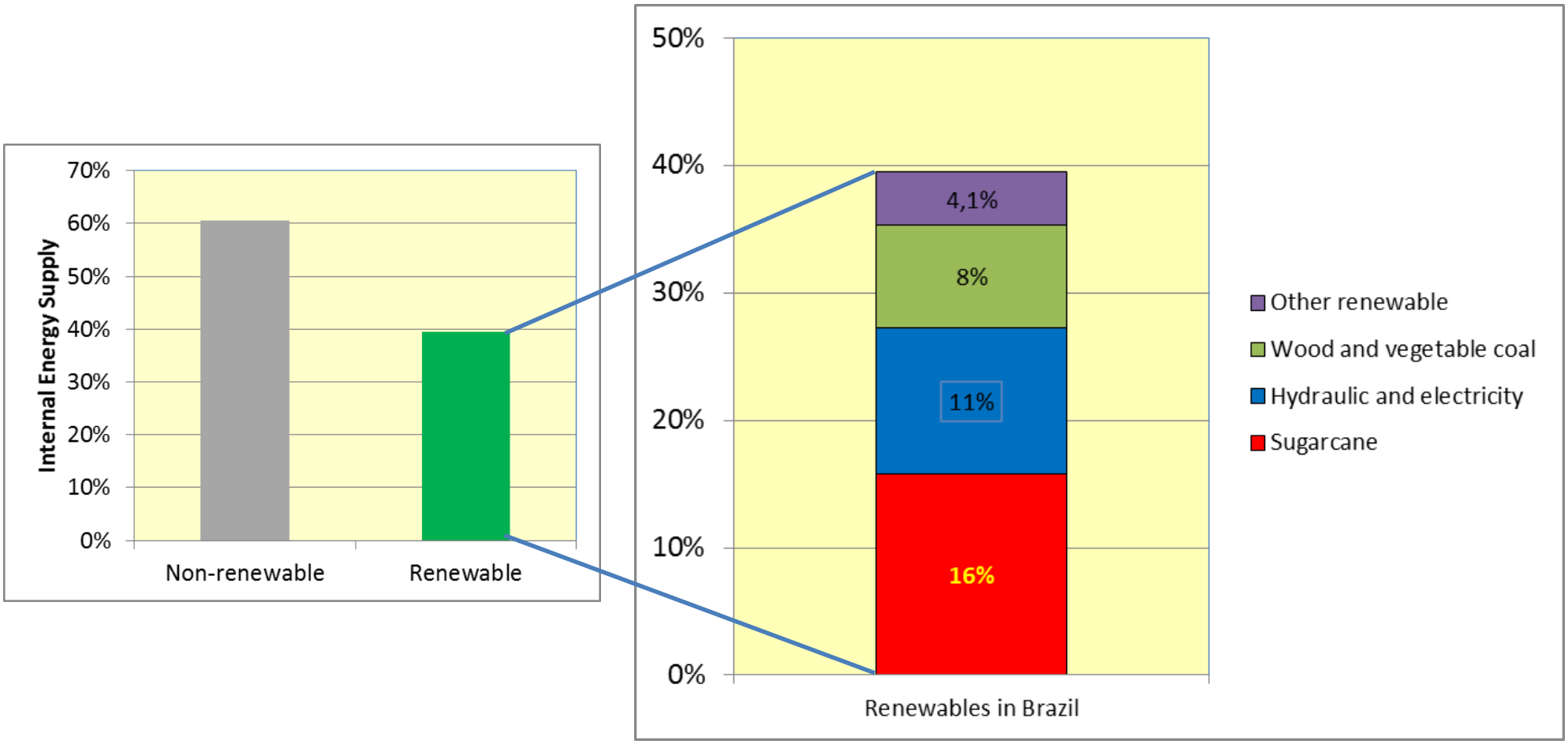
Isaias C. Macedo[a,*], *Joaquim E.A. Seabra*[b], *João E.A.R. Silva*[c]

[a]*Interdisciplinary Center for Energy Planning (NIPE), State University of Campinas (Unicamp), CEP 13084-971, Campinas, SP, Brazil*
[b]*College of Mechanical Engineering, State University of Campinas, Cidade Universitária "Zeferino Vaz", CEP 13083-970, Barão Geraldo, Campinas-SP, Brazil*
[c]*Centro de Tecnologia Canavieira (CTC), CEP 13400-040, Piracicaba, SP, Brazil*

Sugarcane research



Brazil Energy Supply - 2014



Coherent Optical Technologies
PADTEC, Unicamp, FAPESP, CPqD

Lasers, Fiber Optics, And Communications

All-optical mitigation of amplitude and phase-shift drift noise in semiconductor optical amplifiers

Peterson Rocha ; Cristiano M. Gallep ; Evandro Conforti

[-] Author Affiliations

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University of Campinas, School of Technology, R. Paschoal Marmo 1888, Limeira, SP 13484-332, Brazil

Opt. Eng. 54(10), 106110 (Oct 27, 2015). doi:10.1117/1.OE.54.10.106110

History: Received June 17, 2015; Accepted September 24, 2015

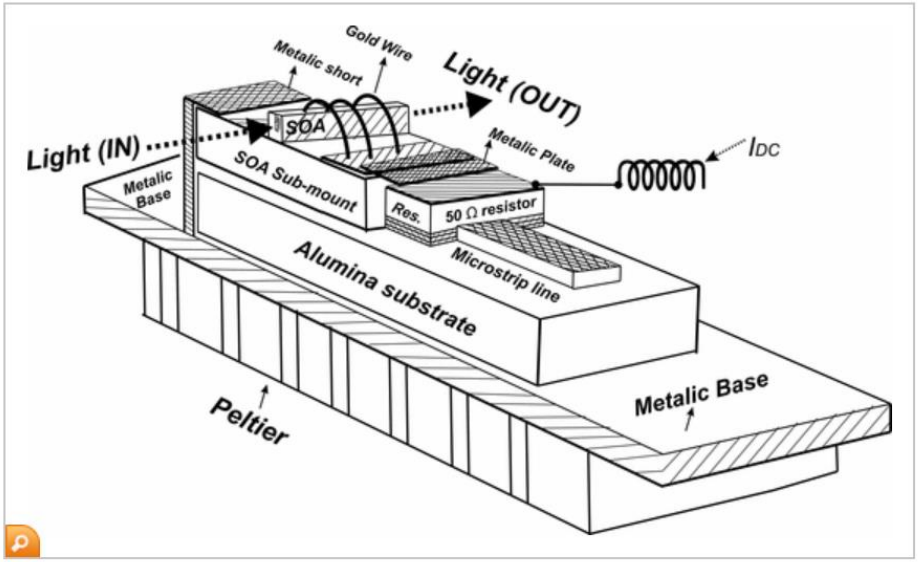


Fig. 8. SOA microwave mount and its components.

JOURNAL OF LIGHTWAVE TECHNOLOGY, VOL. 33, NO. 1, JANUARY 1, 2015 69

Hundred-Picoseconds Electro-Optical Switching With Semiconductor Optical Amplifiers Using Multi-Impulse Step Injection Current

Rafael C. Figueiredo, Napoleão S. Ribeiro, Antonio Marcelo Oliveira Ribeiro, Cristiano M. Gallep, *Member, IEEE*, and Evandro Conforti, *Life Senior Member, IEEE*

Photonics Technology Letters, ...> Volume:21 Issue:12, 2009

Rise Time and Gain Fluctuations of an Electrooptical Amplified Switch Based on Multipulse Injection in Semiconductor Optical Amplifiers

Ribeiro, N.S. ; Dept. of Microwaves & Opt., Univ. of Campinas, Campinas, Brazil ; Toazza, A.L. ; Gallep, C.M. ; Conforti, E.

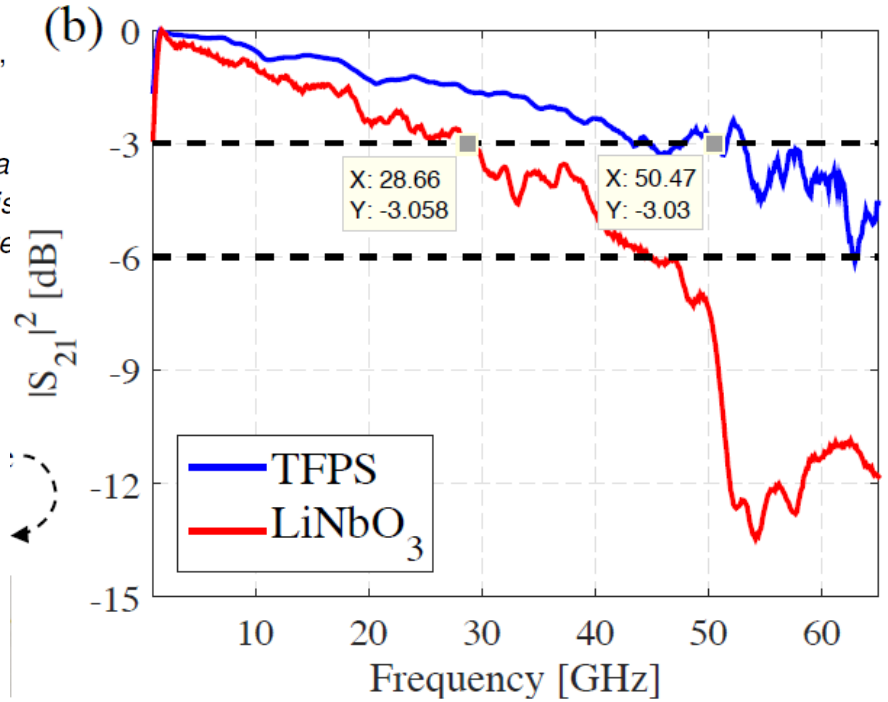
Record distance: 140 km link using TFPS CPqD and BrPhotonics @ ECOC 16

50-GHz+ Thin-Film Polymer on Silicon Modulator for PAM4 100G-per-wavelength Long-Reach Data Center Interconnects

Andrea Chiuchiarelli[(1)], Sandro M. Rossi[(1)], Valery N. Rozental[(1)], Glauco C.C.P. Simões[(1)], Luis H.H. Carvalho[(2)], Júlio C.R.F. Oliveira[(2)], Juliano R.F. Oliveira[(1)], Jacklyn D. Reis[(1)]

[(1)]CPqD, Division of Optical Technologies, Campinas-SP, 13902-086, Brazil,
[(2)]BrPHOTONICS, Campinas-SP, 13086-902, Brazil.

Abstract *This paper demonstrates 50-GHz+ Mach-Zehnder modulator ba Silicon platform for Data Center Interconnects. System level demonstration is 40×112 Gb/s, 56-GBd PAM4 optical channels in 100-GHz WDM grid over re*



MYTH 3: UNIVERSITIES IN BRAZIL DO NOT GENERATE START-UP COMPANIES

Unicamp start-ups: 454 companies, >21.995 jobs, yearly rev. R$ 3 billion

Three myths

- Mith 1: business-university interaction is weak
  - Two first slides demonstrate that for three universities in Brazil that measure their income for R&D the percentage from business would put them among the 20 universities in the U.S. with the largest fractional income from business for Research (not donations).
- Myth 2: Business-university collaborative research is short-term and does not lead to relevant scientific results
  - University-industry research supported by FAPESP achieves relevant results for industry AND relevant scientific results. The São Paulo Engineering Research Centers demonstrate bold science and engineering objectives associated to long term R&D (10-years).
- Myth 3: universities in Brazil do not generate start-up companies
  - Most universities do not follow the start-ups vreated by their students so that “not-measured” becomes confounded with “non-existente”. The slide showed teh case of Unicamp, which displays 454 companies generate3d in the last 30 years, many of which with yearly revenues higher than R$ 200 millions. Overall they sustained ,in 2016, 22 Thousand jobs and revenues above R$ 3 billion.

Developing National Systems of Innovation

University–Industry Interactions in the Global South

Edited by Eduardo Albuquerque, Wilson Suzigan, Glenda Kruss and Keun Lee

Interactions between firms and universities are key building blocks of innovation systems. This book focuses on those interactions in developing countries, presenting studies based on fresh empirical material prepared by research teams in 12 countries from three continents. The result is a more universal and dynamic view of the shaping and reshaping of interactions between firms and universities throughout different countries and phases of development. There are dimensions of those interactions that cannot be seen in the US, Europe or Japan. There are aspects and features of interactions that cannot be seen when we investigate Uganda, China or Mexico alone. In a time of increasing internationalization, interactions between firms and universities must be investigated tracking their international linkages. Professor Richard Nelson (Columbia University) writes in his preface: "The studies reported in this book are among the first to be directed to what is going on in developing countries". **Show Less** ^

CPqD – Telecomm. Research Center

IEEE Photonics Technology Letters

Unrepeatered Transmission of 10×400G over 370 km via Amplification Map Optimization

João C. S. S. Januário, Sandro M. Rossi, Stenio M. Ranzini, Victor E. Parahyba, Valery N. Rozental, André L. N. Souza, Aldário C. Bordonalli, Juliano R. F. Oliveira, Jacklyn D. Reis

CPqD and EE Unicamp

Online the week of July 17th