

# 5th International Conference on Variable Neighborhood Search (ICVNS'17)

Vitor Nazário Coelho<sup>a,b,1</sup> Haroldo Gambini Santos<sup>d,2</sup>  
Igor Machado Coelho<sup>c,b,3</sup> Puca Huachi Vaz Penna<sup>d,4</sup>  
Thays A. Oliveira<sup>e,b,5</sup> Marccone Jamilson Freitas Souza<sup>d,6</sup>  
Angelo Sifaleras<sup>f,7</sup>

<sup>a</sup> *Institute of Computer Science, Universidade Federal Fluminense, Niterói, Brazil*

<sup>b</sup> *Grupo da Causa Humana, Ouro Preto, Brazil*

<sup>c</sup> *Institute of Mathematics and Statistics, Universidade Estadual do Rio de Janeiro, Rio de Janeiro, Brazil*

<sup>d</sup> *Department of Computing, Universidade Federal de Ouro Preto, Ouro Preto, Brazil*

<sup>e</sup> *Graduate Program of the Department of Engineering and Information and Communication Technologies, Universitat Pompeu Fabra, Barcelona, Spain*

<sup>f</sup> *Department of Applied Informatics, School of Information Sciences, University of Macedonia, 156 Egnatia Str., Thessaloniki 54636, Greece*

---

## Abstract

This volume presents selected, peer-reviewed, short papers that were accepted for presentation in the 5th International Conference on Variable Neighborhood Search (ICVNS'17) which was held in Ouro Preto, Brazil, during October 2-4, 2017.

*Keywords:* Metaheuristics, Variable Neighborhood Search, Discrete Optimization, Nonlinear optimization.

---

Please cite this paper as:

Coelho V.N., Santos H.G., Coelho I.M., Oliveira T.A., Penna P.H.V., Souza M.J.F., and Sifaleras A. (Eds.), "5th International Conference on Variable Neighborhood Search (ICVNS'17)", *Electronic Notes in Discrete Mathematics*, Elsevier B.V., Vol. 66, pp. 1-5, 2018.

The final publication is available at Elsevier via <https://doi.org/10.1016/j.endm.2018.03.001>

# 1 Introduction

Variable Neighborhood Search (VNS) is a metaheuristic, which exploits the idea of systematic neighborhood changes within a search, in order to escape from valleys which contain local optimal solutions. Furthermore, according to the designed neighborhood exploration strategy, it may walk in the space of solutions only by checking efficient and prominent solutions. Several successful applications of VNS have been already reported for the resolution of various combinatorial and global optimization problems [1]. VNS'17 focused on theoretical, methodological, and applied aspects of variable neighborhood search to computationally difficult problems.

Topics of interest for VNS'17 were: Theoretical or empirical analysis of VNS, New variants of deterministic and stochastic VNS, Continuous global VNS, Convergent VNS methods, Metaheuristics and VNS, Formulation space VNS, Multi-objective VNS, Parallel VNS, and VNS hybrids. The conference program included 32 talks across nine contributed sessions during the three days of the conference, and it was attended by 80 participants.

The general chair was Nenad Mladenović, (Serbia), while Pierre Hansen, (Canada) was the Honorary Chair of the conference. The conference was chaired by Haroldo Gambini Santos, (Brazil) and Vitor Nazário Coelho, (Brazil). Moreover, the Organizing Committee of VNS'17 was chaired by Marcone Jamilson Freitas Souza (Brazil), Puca Huachi Vaz Penna (Brazil), Igor Machado Coelho (Brazil) and Thays Aparecida de Oliveira (Spain). Also, the following plenary talks were given by invited speakers at the conference:

- Nenad Mladenović, Mathematical Institute of the Serbian Academy of Sciences and Arts: “Less is More Approach and Variable Neighborhood Search”.
- Christian Blum, Artificial Intelligence Research Institute (IIIA) - Spanish National Research Council (CSIC): “Recent Examples of ILP-based Hybrid Metaheuristics”.

This was the fifth edition of the International Conference on Variable Neighborhood Search. The previous edition of the conference (VNS'16) was held during October 3-5, 2016, in Málaga, Spain [3]. The third edition of the

---

<sup>1</sup> Email: vncoelho@gmail.com

<sup>2</sup> Email: haroldo.santos@gmail.com

<sup>3</sup> Email: igor.machado@ime.uerj.br

<sup>4</sup> Email: puca@iceb.ufop.br

<sup>5</sup> Email: thaysoliveira7@gmail.com

<sup>6</sup> Email: marcone@iceb.ufop.br

<sup>7</sup> Email: sifalera@uom.gr

conference (VNS'14) was held during October 8-11, 2014, in Djerba, Tunisia [2]. The second edition, the EURO Mini Conference (MEC XXVIII) on Variable Neighborhood Search, was held during October 4-7, 2012, in Herceg Novi, Montenegro [4]. Finally, the first EURO Mini Conference (MEC XVIII) on VNS, was held during November 23-25, 2005, in the city of Puerto de La Cruz, in the island of Tenerife, Spain.

## 2 Organizers and Sponsors

The conference was organized by the Group of Optimization and Algorithms (GOAL) and the Department of Computing of the Federal University of Ouro Preto, Brazil.

## 3 Program Committee

The Program Committee of the conference consisted of the following members:

Abdulaziz Alkandari (Kuwait)	Julio Brito (Spain)
Alexandre Martins (Brazil)	Luciana Buriol (Brazil)
Alysson M. Costa (Australia)	Lucidio Cabral (Brazil)
Anand Subramanian (Brazil)	Luiz Satoru Ochi (Brazil)
André Gustavo (Brazil)	Marcus Ritt (Brazil)
Andréa Cynthia Santos (France)	Martin Ravetti (Brazil)
Angelo Sifaleras (Greece)	Mauricio Resende (USA)
Belén Melián Batista (Spain)	Miri Cohen (Israel)
Pedro González (Brazil)	Mirjana Čangalović (Serbia)
Celso C. Ribeiro (Brazil)	Olinto Araújo (Brazil)
Christian Blum (Spain)	Patrick Siarry (France)
Daniel Aloise (Canada)	Reza Tavakkoli-Moghaddam (Iran)
Dragan Urošević (Serbia)	Rosiane de Freitas (Brazil)
Dragoš Cvetković (Serbia)	Sebastián Urrutia (Brazil)
Eduardo G. Pardo (Spain)	Sérgio Ricardo de Souza (Brazil)

Emilio Carrizosa (Spain)	Simone Martins (Brazil)
Felipe M. Müller (Brazil)	Tatjana Davidović (Serbia)
Frederico Gadelha Guimarães (Brazil)	Thibaut Lust (France)
Geraldo Robson Mateus (Brazil)	Thibaut Vidal (Brazil)
Gilles Caporossi (Canada)	Thomas Stützle (Germany)
Günther Raidl (Austria)	Tulio Toffolo (Brazil)
Gustavo Semaan (Brazil)	Vera Kovačević-Vujčić (Serbia)
Helena Ramalhinho Lourenço (Spain)	Yuri Kochetov (Russia)
José A. Moreno-Pérez (Spain)	

## 4 Organizing Committee

The Organizing Committee members of the conference were as follows:

Marcone Jamilson Freitas Souza (Brazil)	Marcus Vinicius Silva e Souza (Brazil)
Igor Machado Coelho (Brazil)	Thays Aparecida de Oliveira (Spain)
Puca Huachi Vaz Penna (Brazil)	Minghe Hu (Brazil)
Rafael A.M. Gomes (Brazil)	

## 5 Acknowledgments

We would like to express our sincere thanks to all the authors for providing excellent papers covering both theoretical advances and applied aspects of VNS and also the invited speakers. In addition, we also appreciate the hard work by all the reviewers for their excellent reports. Furthermore, we are deeply thankful to all the members of the organizing committee of ICVNS'17 for their hard work in preparing the conference in the beautiful city of Ouro Preto. It is also noteworthy mentioning the salutary atmosphere of discussions and criticisms that was established during the conference, more than a scientific meeting, it was an opportunity for establishing long life partnerships and making friends. Finally, once again, we wish to acknowledge the Editor-in-Chief of ENDM, Professor Vadim Lozin for his continuous support to the series of the VNS

international conferences.

## References

- [1] Hansen, P., N. Mladenović, R. Todosijević and S. Hanafi, *Variable neighborhood search: basics and variants*, EURO Journal on Computational Optimization **5** (2017), pp. 423–454.
- [2] Jarboui, B., A. Sifaleras and A. Rebai, *3rd International Conference on Variable Neighborhood Search (VNS'14)*, Electronic Notes in Discrete Mathematics **47** (2015), pp. 1–4.
- [3] Pardo, E. G. and A. Sifaleras, *4th International Conference on Variable Neighborhood Search (ICVNS'16)*, Electronic Notes in Discrete Mathematics **58** (2017), pp. 1–5.
- [4] Sifaleras, A., D. Urošević and N. Mladenović, *EURO Mini Conference (MEC XXVIII) on Variable Neighborhood Search*, Electronic Notes in Discrete Mathematics **39** (2012), pp. 1–4.