CURRICULUM VITAE

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Nationality: Romanian **Date and place of birth: 11.04.1954/ Bucharest, Romania**

Education (*degrees, dates, universities*)

University or equivalent Name and place	Years attended From	To	Degrees
Faculty of Geology and Geography, University of Bucharest	**1974**	**1979**	**Master of Science, June 1979.**
Faculty of Physics, University of Bucharest	**1994**	**2001**	**PhD diploma obtained in 16.03.2001.**

Career/Employment (*employers, positions and dates*)

Research Institution or University Name and place	Period of duty From	To	Academic responsibilities
1.CENTER FOR EARTH PHYSICS Bucharest-Magurele	**1979 - 1988**		**geophysicist**
2.CENTER FOR EARTH PHYSICS Bucharest-Magurele	**1988 - 1990**		**geophysicist researcher**
3. NATIONAL INSTITUTE FOR EARTH PHYSICS Bucharest - Magurele	**1990 - Present**		**senior geophysicist researcher and Head of the Laboratory for lithosphere structure and dynamics**

Specialization (*specify*)

(i) main field : Study of the lithosphere structure and physical properties from seismic and seismological data.

(ii) other fields : Computer programming in FORTRAN; computer networking .

(iii) current research interests: microzonation of Bucharest City and metropolitan employing in situ seismic measurements; seismicity of Romania.

Honours, Awards, Fellowships, Membership of Professional Societies

1. Member of Romanian Society of Geophysics.
2. Member in the Management Committee of COST 625 Action: 3D Monitoring of Active Tectonic Structures.
3. National representative of International Lithosphere Project in Romania.

Publications -

- **Number of papers in refereed journals: 27.**
- **Number of communications to scientific meetings: 38.**

Grants , scholarships, bursary :

Country	Period and working domain
Italy	**1991 - Workshop:"Modes of Crustal Deformation " - 7 days, Erice, Sicily.**
Canada	**1994 – 1995 – 6 months work in the LITHOPROBE Programme- Laval University, Quebec, Canada.**
Italy	■ **1999 - Participation at the "V-th Workshop on Non-Linear Dynamics and Earthquake prediction" - 4 - 22 Oct. 1999, ICTP, Trieste, Italy.**
Germany	■ **1999 - 2000 – 3 months- participation in the data processing and interpretation of the data from the regional seismic profile VRANCEA'99 - in Karlsruhe University, Karlsruhe, Germany.**
Romania	**May 2001 : "Administering LINUX" course, 5 days - Genesys Software Romania**
Italy	■ **2002 - Participation at the "VI-th Workshop on 3-Dimensional Modelling of Seiemic Waves Generation, Propagation and their Invertion, 30 Sept.-12 Oct. 2002, ICTP, Trieste, Italy.**
Germany	■ **2002 - 2003 – 4 months- participation in the data processing and interpretation of the data from the regional seismic profile VRANCEA2001 - in Karlsruhe University, Karlsruhe, Germany.**
Norway	**2004 - 2 months fellowship in NORSAR Institute, Oslo - participation in the seismic data processing from earthquakes and explosions.**

Experience in the national/ international research programs:

Program/Project	Role	Period: from... to... (month, year)
NATO Linkage Grant - EST.CNS.976375 : " The Earth's Lithosphere under the Vrancea area from seismic refraction investigation" .	**Investigator**	**1999 – 2001**
NATO project - Computer Networking Supplement -EST.CLG.974792.	**Co-director from Romania**	**1999 – 2000**
Proiect NATO "Science for Peace" 972226	**Investigator**	**1999- 2002**
Romanian-Helvetian SCOPES Program	**Team member**	**2000 – 2003**
Networking Infrastructure grant CN.NIG.978382: Improving the networking of Romanian institutes for physics and their uplink connectivity to Internet.	**Co-director from Romania**	**2001 - 2003**
Project CERES C1 nr. 39/2001: "Physico-structural models of the high seismicity zones from Romania".	**Project Director**	**Oct. 2001 - Dec. 2003 Final Report : 30 Ian.2004**
Project CERES C2 nr. 34/2002: "Models of the seismic velocity distributions in the sedimentary layers of the Moesian Platform, with details in the Bucharest City area".	**Project Director**	**Nov. 2002 – nov. 2004 Final Report: 30 dec. 2004**

Project CERES C3 nr. 3-1/2003: "Physical properties of the upper sedimentary rocks in Bucharest Metropolitan area".	**Project Director**	**Oct.2003 – Nov. 2005** **Final Report: 15 nov. 2005**
Project MENER 4 Nr. 511/ oct.2004: „Seismic tomography in the area of the great dams. Application on the Vidraru Dam."	**Project Director**	**Oct. 2004 - June 2006. Final Report: July 2006.**
Project CERES C4 no. 4-2/oct. 2003: "Models integration of the frequency characteristics of upper sedimentary layers from Bucharest and adjacent areas with the goal of a better seismic microzonation of Bucharest City."	**Project Director**	**Oct. 2004 - Sept. 2006. Final Report: 15 sept. 2006.**
NATO SfP Project PDD(CP)-(ESP.EAP.SFP 981882) Site-effect analyses for the earthquake-endangered metropolis Bucharest, Romania	**Co-director from Romania**	**January 2006 – December 2008.**

2. Self Evaluation

Since 1990 I was nominated the head of the Laboratory for Lithosphere structure and dynamics, being responsible for 12 people, half of them being scientific researchers. I am also member of the Administrative Committee of N. I. E. P. and I have actively participated in developing several research programs in our institute. I am maintaining also the web page of the laboratory in our Institute site: www.infp.ro.

In all the official trips abroad I was dealing with software problems and I have developed computer programs in FORTRAN 77 and I have used these programs under MS-DOS, Windows or UNIX environment; I have experience with data base and converting of seismic and seismological data (CONVSEIS, PCSUDS). I am familiar with most of the utility programs working under WINDOWS (MSOffice, Grapher, Surfer, Corel). The working language was English and French.

There were 3 NATO Grants which I proposed and after their approval I have become Co-director from Romania. In the course of their performing, I had close contact directly with Officials from Brussels from which I have learned the rules and regulations necessary for a good project management.

The 5 national project which I have directed in the period 2001-2006 proved the acquired capacity to develop proposals, to rule the selected team and to manage the approved projects until the Final report.

3. International Funding ID

Project	Role	Period	Funding scheme
NATO SfP Project PDD(CP)-(ESP.EAP.SFP 981882) Site-effect analyses for the earthquake-endangered metropolis Bucharest, Romania	**Co-director from Romania**	**January 2006 – December 2008.**	**Funding: 84 500 Euro for the whole project.**

SELECTED PAPERS 2000 – 2009
Dr. ing. Andrei Bala

1. Prodehl, C., Raileanu, V., Hauser F., Bala, A., Rumpel, H.-M., Schulze, A.: The seismic-refraction project VRANCEA-99, EUROPROBE NEWS 13, June 2000, 15-18.
2. Raileanu V., Hauser F., Bala A., Prodehl C., Schulze A.: Modeling of the crustal structure along the refraction seismic profile VRANCEA'99, Bucharest International Geophysical Conference &Exposition, Romanian Geophysics, vol. 7, Suppl.1, P-CS-3, 514-517, 2000.
3. Hauser, F., Raileanu, V., Prodehl, C., Bala, A., Schulze, A., and Denton, P., The Seismic-Refraction Project VRANCEA-99. Open-File Report, Geophysical Institute, University of Karlsruhe, 2000.
4. Bala A., Diaconescu M., Biter M.: Spatial distribution of the earthquakes in the Vrancea zone and tectonic correlations, Roman. Jour. of Physics, 46, vol.7-8, 2001.
5. F. Hauser, V. Raileanu, W. Fielitz, A. Bala, C. Prodehl, G. Polonic: VRANCEA99 - The Crustal structure beneath the southeastern Carpathians and the Moesian Platform from a refraction seismic profile in Romania, Tectonophysics, vol. 340, 3-4, 233-256, 2001.
6. Raileanu, V., Bala, A., Some correlations between the distribution of the crustal earthquake depths and rheological properties within the Moesian Platform and its northern neighborhood, Romanian Journal of Physics, 46, vol.7-8, 2001.
7. Bala A., Raileanu V., Popa Mihaela, Some Physical properties of the crust along the seismic refraction profile VRANCEA' 99, Romanian Jour. of Physics, vol. 47, 9 –10, 933 – 944, 2002.
8. Radulian, M., Popescu Emilia, Bala, A., Utale Ana, Catalog of fault plane solutions for the earthquakes occurred on the romanian territory, Romanian Jour. of Physics, vol. 47, 5 – 6, 663-685, 2002.
9. Radulian, M., Bala, A., Popescu, E., Earthquakes distribution and their focal mechanism in seismogenic zones of Romania, Romanian Jour. of Physics, vol. 47, 9 – 10, 945 – 963, 2002.
10. Hauser, F., Prodehl, C., Landes, M., and the VRANCEA working group, Seismic experiment targets earthquake-prone region in Romania, EOS, transactions, vol.83, no.41, p. 457, 462-463, 2002.
11. Bala A., Radulian M., Popescu, E., Earthquake distribution in correlation with the active tectonic zones of Romania, Journal of Geodynamics, 36, 129-145, 2003.
12. Bala A., Radulian M., Popescu E., Benetatos C., Earthquake focal mechanisms and their depth distributions in Vrancea zone, Romania, Proceedings of the 5-th Symposium on Eastern Mediterranean Geology, Thessaloniki, Greece, 14-20 April 2004, T5-9.
13. A. Bala, M. Radulian, E Popescu, *Intermediate depth earthquake distribution and their focal mechanism in Vrancea zone, Romania.,* in Studi Geologici Camerti, Special Issue, 2004, Proceedings of the Workshop COST – Action 625, **Active Faults : Analysis, Processes and Monitoring,** 25 – 28, 2004.
13. Bala A., Raileanu V., Mandrescu N., Zihan I., Dananau E., *Physical properties of the Quaternary sedimentary rocks in the Eastern Bucharest area*, Romanian Reports in Physics, Vol. 57, No. 1, p. 151–163, 2005.
14. Raileanu V., Bala A., Hauser F., Prodehl C., Fielitz W., *Crustal properties from S-wave and gravity data along a seismic refraction profile in Romania,* Tectonophysics, 410, 251 – 272, 2005.
15. Raileanu V., Bala A., Grecu B., An assessment of local seismic effects in sites located from the North of Dobrogea to the Eastern Carpathians Bend , *Romanian Reports in Physics,* vol. 57, 2, 267 – 279, 2005.
16. Bala, A., Raileanu, V., Grecu, B., Zihan, I., Ciugudean, V., *"Physical properties of the upper sedimentary rocks in the Bucharest Metropolitan area"*, Journal of the Balkan Geophysical Society, Vol. 8, Suppl.1, p. 757 – 760, 2005.
17. Bala, A., Radulian, M., Popescu, E., Benetatos, C., *Characteristics of the focal mechanism of the earthquakes in Romania* , Journal of the Balkan Geophysical Society, Vol. 8, Suppl.1, p. 699 – 702, 2005.

18. Grecu B., Radulian M., Popa M., Bonjer K.-P., Bala A., Raileanu V., *Empirical evaluation of site effects in Romania by means of H/V spectral ratios,* Journal of the Balkan Geophysical Society, Vol. 8, Suppl.1, p. 711 – 714, 2005.
19. Raileanu, V., Hauser, F., Fielitz, W., Dinu, C., Landes, M., Bala, A. And Prodehl, C., *A crustal structure model from the North Dobrogea through the Vrancea region to the Western Transylvania,* Journal of the Balkan Geophysical Society, Vol. 8, Suppl.1, p. 299 – 302, 2005.
20. V.Raileanu, A.Bala, B.Grecu, *Local seismic effects as resulted from a seismic experiment in Romania,* Journal of the Balkan Geophysical Society, Vol. 8, Suppl.1, p. 703 - 706, 2005.
21. Bala A., Raileanu V., Zihan I., Ciugudean V., Grecu B., Physical and dynamic properties of the shallow sedimentary rocks in Bucharest Metropolitan area, *Romanian Reports in Physics* , 58, 2, 221 - 250, 2006.
22. D. Hannich, G. Huber, D. Ehret, H. Hoetzl, S. Balan, A. Bala, M. Bretotean, V. Ciugudean, *SCPTU- Techniques used for shallow geologic/ hydrogeologic site characterization in Bucharest, Romania,* Proceedings of the Third International Symposium on the effects of Surface geology on Seismic Motion, Grenoble, France, 30 August - 1 September 2006, paper 71, 12 p.
23.V.Raileanu, A.Bala, B.Grecu, Local Seismic Effects in Sites Located in the South Central Part of Transylvania Based on Spectral Ratios, *Romanian Reports in Physics, Vol. 59, No. 1, P.* 165 – 178, 2007.
24. F. Hauser , V. Raileanu , W. Fielitz , C. Dinu , M. Landes , A. Bala , C. Prodehl, Seismic crustal structure between the Transylvanian Basin and the Black Sea, Romania, Tectonophysics, 430, 1 – 25, 2007.
25. Bala A., Ritter J.R.R., Hannich D., Balan S,F., Arion C., Local Site Effects Based on In situ Measurements in Bucharest City Romania, in the Frame of NATO SfP Project 981882, Proceedings of the International Symposium on Seismic Risk reduction, *ISSRR-2007,* Paper 06, 367-374, Ed Orizonturi Universitare Timisoara, ISBN 978-973-638-311-3
26. Bala A., Zihan I., Ciugudean V., Raileanu V., Grecu B.(2007). Physical and Dynamic properties of the Quaternary Sedimentary Layers in and around Bucharest City, Proceedings of the International Symposium on Seismic Risk reduction, *ISSRR-2007,* Paper 07, 359-366, Ed Orizonturi Universitare Timisoara, ISBN 978-973-638-311-3
27. V. Raileanu, C. Dinu, M. Radulian, V. Diaconescu, A. Bala, E. Popescu and M. Popa, (2007), *Crustal seismicity and active fault systems in the SE of Romania,* Proceedings of the International Symposium on Seismic Risk reduction, *ISSRR-2007,*Paper 14, 269-276, Ed. Orizonturi Universitare Timisoara, ISBN 978-973-638-311-3
28. A. Bala, S.F. Balan , J.R.R. Ritter , D. Hannich , G. Huber , J. Rohn , *Seismic site effects based on in situ borehole measurements in Bucharest, Romania.*, Proceedings of the International Symposium on Strong Vrancea Earthquake and risk mitigation, Oct. 4 – 6 2007, Bucharest, Romania, 190 – 204, 2007, ISBN 978-973-755-247-1
29. A. Bala , B. Grecu , D. Hannich , D. Ehret, V. Raileanu, *Methods to assess the site effects based on in situ measurements in Bucharest city*., Proceedings of the International Symposium on Strong Vrancea Earthquake and risk mitigation, Oct. 4 – 6, 2007, Bucharest, Romania, 248 – 252, 2007, ISBN 978-973-755-247-1
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31. V. Raileanu, F. Hauser, A. Bala, W. Fielitz, C. Prodehl, C. Dinu, M. Landes, *Deep Seismic Sounding Across The Vrancea Region,* Proceedings of the International Symposium on Strong Vrancea Earthquake and risk mitigation, Oct. 4 – 6, 2007, Bucharest, Romania, 80 – 85, 2007, ISBN 978-973-755-247-1.
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33. C.O. Cioflan, F. Romanelli, B. Grecu, M. Popa, N. Mandrescu, V. Raileanu, A. Bala, G.F.

Panza, General Mapping of the strong ground motion in Bucharest area and related hazard/risk scenarios, in *Impact of Vrancea Earthquakes on the Security of Bucharest and other Adjacent Areas* Ed. G.F. Panza, M. Radulian, I. Kuznetsov, 93-99, 2007.
34. Bala, A., Cristea, P., Raileanu, V., Nitica, C., *Continuous Distribution of Elastic Parameters of the Shallow Quaternary Layers along the 3C Seismic Profile East Bucharest, Romanian Reports in Physics*, Vol. 60, no. 1, 111-129, 2008.
35. B. Zaharia, M. Radulian, M. Popa, B. Grecu, A. Bala, D. Tataru, Estimation of the local response using Nakamura method for Bucharest area, *Romanian Reports in Physics*, Vol. 60, no. 1, 131-144, 2008.
36. Bala A., Zihan I., Ciugudean V., Raileanu V., Grecu B., Physical and Dynamic properties of the Quaternary Sedimentary Layers in and around Bucharest City, *Romanian Reports in Physics*, Vol. 60, no. 2, 389 – 401, 2008.
37. Bala, A., Aldea, A., Hannich, D., Ehret, D., Raileanu, V., Methods to Assess the Site effects Based on in situ Measurements in Bucharest City, Romania, *Romanian Reports in Physics, accepted for publication, 2008.*
38. Bala A., Grecu B., Ciugudean V., Raileanu V., Dynamic properties of the Quaternary sedimentary rocks and their influence on seismic site effects. Case study in Bucharest City, Romania, Soil Dynamics and Earthquake Engineering, 29, 144 – 154, 2009.
39. A. Bala, S. F. Balan, J. Ritter, D. Hannich. Seismic Site Effect Modelling Based on *In Situ* Borehole Measurements in Bucharest, Romania, Proceedings of the *NATO Advanced Research Workshop on Coupled Site and SoilStructure Interaction Effects with Application to Seismic Risk Mitigation*, Borovets, Bulgaria, 30 August – 3 September 2008, Springer, Ed. Tom Schanz, Roumen Jankov, 101-111.