

Curriculum Vitae

Aris Kyparissis

Associate Professor of Plant Ecophysiology

Nationality: Greek

Date & place of birth: 22/10/1966, Athens, Greece

University of Ioannina
Department of Biological Applications and Technologies
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EDUCATION

- 1990 BSc in Biology – Department of Biology, University of Patras, Greece
1995 PhD in Plant Ecophysiology – Department of Biology, University of Patras, Greece
Thesis title: *Phlomis fruticosa* L.: the pattern of seasonal leaf dimorphism and the adaptive potential of leaves to the Mediterranean climate

PROFESSIONAL POSITIONS

- 2012 – present Associate Professor in the Department of Biological Applications and Technologies, University of Ioannina, Greece
2001 – 2012 Assistant Professor in the Department of Biological Applications and Technologies, University of Ioannina, Greece
2000 – 2001 Visiting Lecturer in the Department of Agriculture Crop Production and Rural Environment, University of Thessaly, Greece

SCOLARSHIPS

- 1992 – 1995 PhD Scholarship from the Greek Scholarship Foundation
1993 Erasmus Scholarship for 3 months at the Abisko Scientific Research Station of the Royal Swedish Academy of Sciences

TEACHING EXPERIENCE

Undergraduate Courses

- 2000 – 2001 Theoretical and laboratory courses of **Plant Anatomy** at the Department of Agriculture Crop Production and Rural Environment, University of Thessaly, Greece.
- 2001 – present Theoretical and laboratory courses of **Plant Anatomy and Morphology, Plant Physiology** and **Ecophysiology of Mediterranean Plants** at the Department of Biological Applications and Technology, University of Ioannina, Greece.

Supervision of PhD theses

- Katerina Iovi, 2011, Hydraulic architecture of Mediterranean ecosystems: a study of different functional groups along a climatic gradient.
- Stavros Stagakis, 2012, Evaluation and use of remote sensing techniques for monitoring of terrestrial ecosystem dynamics.
- Nikos Markos, 2013, Development of a photosynthesis model for estimation of Mediterranean ecosystems productivity.
- Theofilos Vanikiotis, ongoing, Utilization of advanced remote sensing techniques to study dynamic vegetation parameters.

Supervision of MSc theses

- Georgios Papazis, 2006, A study of the effects of plant protection products to the plants that are going to protect.
- Karolos Giannakis, 2006, Ecophysiological comparison between traditional and commercial varieties of peas (*Pisum sativum* L.) and beans (*Vicia faba* L.).

Supervision of undergraduate dissertations

- Stavros Stagakis, 2005, Monitoring mountainous ecosystem dynamics in the region of Epirus, Greece using satellite imagery.
- Elena Arvaniti, 2005, Seasonal fluctuation of the photosynthetic performance of *Malva sylvestris* and correlation with environmental parameters.
- Theodora Ioannidou, 2006, Monitoring of *Fagus sylvatica* and *Acer platanoides* ecosystem dynamics with MODIS satellite images.
- Chrysa Kolovou, 2007, Embolism seasonal fluctuation in relation to functional characteristics of Mediterranean plants.
- Georgia Christofi, 2007, Photosynthesis and photoinhibition for the Mediterranean deciduous species *Quercus pubescens* and *Prunus cerasus*.
- Iason Zafeiridis, 2009, Leaf light history and photosynthesis.
- Aggeliki Siomou, 2009, Annual rings of *Quercus frainetto*, *Quercus cerris* and *Pinus nigra* and correlation with meteorological parameters.
- Sotiris Gardiakos, 2010, A study of phenological parameters of *Phlomis fruticosa* ecosystems using the MODIS satellite sensor and their correlation with climatic parameters.
- Theofilos Vanikiotis, 2010, A study of phenological parameters of an *Acer platanoides* ecosystem using the MODIS satellite sensor and their correlation with climatic parameters.
- Stelina Papadaki, 2012, A correlation investigation between chlorophyll fluorescence indices and photosynthetic CO₂ assimilation.
- Marinos Neokleous, 2013, Seasonal variation of photosynthesis optimum temperature for three Mediterranean species.
- Yiannis Liamis, ongoing, Estimation of chlorophyll concentration through field measurements and satellite images in the lake Orestiada, Makedonia, Greece.

RESEARCH ACTIVITY

Research Interests

- Plant Ecophysiology
- Natural ecosystem dynamics through field measurements, modeling and remote sensing
- Effects of Global Climate Change on plants
- Botanical Databases.

Research Projects

Ongoing

- 2012 – present Principal Investigator in the project **Development of a satellite monitoring system for the estimation of primary productivity of the forests of Northern Pindus National Park in a GIS environment**. In collaboration with the Institute for Astronomy, Astrophysics, Space Applications and Remote Sensing (IAASARS) of the National Observatory of Athens (NOA). This research project has been co-financed by the European Union (European Regional Development Fund- ERDF) and Greek national funds through the Operational Program “THESSALY- MAINLAND GREECE AND EPIRUS-2007-2013” of the National Strategic Reference Framework (NSRF 2007-2013).
- 2006 – present Participation in the project **Study of Ecosystem Dynamics using CHRIS/PROBA Hyperspectral data**. In collaboration with the Institute for Astronomy, Astrophysics, Space Applications and Remote Sensing (IAASARS) of the National Observatory of Athens (NOA) and European Space Agency (ESA). Principal Investigator Dr Olga Sykioti (IAASARS, NOA).

Finalized

- 2005 – 2007 Principal Investigator in the project **A study of ecosystem dynamics of Northern Pindus National Park using satellite images**. In collaboration with the Institute for Astronomy, Astrophysics, Space Applications and Remote Sensing (IAASARS) of the National Observatory of Athens (NOA) and the Laboratory of Meteorology of the Physics Department of University of Ioannina. The project was financed by the Ministry of Education and Religious Affairs of Greece.
- 2007 Participation in the project **Advanced technologies and remote sensing techniques in the monitoring and protection of forestal and other land ecosystems**. In collaboration with the Institute for Astronomy, Astrophysics, Space Applications and Remote Sensing (IAASARS) of the National Observatory of Athens (NOA). The project was financed by the General Secretariat for Research and Technology of Greece (Programme "Human Resources in Research and Technology, Creation of Human Networks", Measure 8.3, Action 8.3.6).
- 2003 – 2004 Principal Investigator in the project **Database of medicinal plants of Vikos - Aaos National Park**. The project was financed by the Ministry for the Environment Physical Planning and Public Works of Greece and co-financed by WWF-Hellas and Rizareios

- Foundation.
- 2000 – 2001 Participation in the project **Euro+Med PlantBase**. Principal Investigator Professor Georgia Kamari, Laboratory of Botany, Department of Biology, University of Patras, Greece. The project was financed by EU.
- 2000 Participation in the project **Development of a data bank for the flora of Greece (FLORA HELLENICA)**. Principal Investigator Professor Georgia Kamari, Laboratory of Botany, Department of Biology, University of Patras, Greece. The project was financed by the General Secretariat for Research and Technology of Greece.
- 1996 – 1999 Participation in the project **Effects of enhanced UV-B radiation on sensitive European Ecosystems**. Principal Investigator Professor Yiannis Manetas, Laboratory of Plant Physiology, Department of Biology, University of Patras, Greece. The project was financed by EU.
- 1992 – 1995 Participation in the project **Effects of enhanced UV-B radiation on plants**. Principal Investigator Professor Yiannis Manetas, Laboratory of Plant Physiology, Department of Biology, University of Patras, Greece. The project was financed by EU.

Publications in International Journals

1. Kyparissis A. & Manetas Y. 1993. Seasonal leaf dimorphism in a semi-deciduous Mediterranean shrub: ecophysiological comparisons between winter and summer leaves. *Acta Oecologica*, 14, 23-32.
2. Kyparissis A. & Manetas Y. 1993. Autumn revival of summer leaves in the seasonal dimorphic, drought semi-deciduous Mediterranean shrub *Phlomis fruticosa* L. *Acta Oecologica*, 14, 725-737.
3. Karabourniotis G., Kyparissis A. & Manetas Y. 1993. Leaf hairs of *Olea europaea* protect underlying tissues against ultraviolet-B radiation damage. *Environmental and Experimental Botany*, 33, 341-345.
4. Grammatikopoulos G., Karabourniotis G., Kyparissis A., Petropoulou Y. & Manetas Y. 1994. Leaf hairs of olive (*Olea europaea* L.) prevent stomatal closure by ultraviolet-B radiation. *Australian Journal of Plant Physiology*, 21, 293-301.
5. Grammatikopoulos G., Kyparissis A. & Manetas Y. 1995. Seasonal and diurnal gas exchange characteristics and water relations of the drought semi-deciduous shrub *Phlomis fruticosa* L. under Mediterranean field conditions. *Flora*, 190, 71-78.
6. Petropoulou Y., Kyparissis A., Nikolopoulos D. & Manetas Y. 1995. Perturbations of the normal UV-B radiation environment alter leaf growth rates in *Phlomis fruticosa* L. seedlings. *Environmental and Experimental Botany*, 35, 371-377.
7. Petropoulou Y., Kyparissis A., Nikolopoulos D. & Manetas Y. 1995. Enhanced UV-B radiation alleviates the adverse effects of summer drought in two Mediterranean pines under field conditions. *Physiologia Plantarum*, 94, 37-44.
8. Nikolopoulos D., Petropoulou Y., Kyparissis A. & Manetas Y. 1995. Effects of enhanced UV-B radiation on the drought semi-deciduous Mediterranean shrub *Phlomis fruticosa* L. under field conditions are season-specific. *Australian Journal of Plant Physiology*, 22, 737-745.
9. Kyparissis A., Petropoulou Y. & Manetas Y. 1995. Summer survival of leaves in a soft-leaved plant (*Phlomis fruticosa* L., Labiatae) under Mediterranean field conditions: avoidance of photoinhibitory damage through decreased chlorophyll contents. *Journal of Experimental Botany*, 46, 1825-1831.
10. Bjorn L.O., Callaghan T.V., Johnsen I., Lee J.A., Manetas Y., Paul N.D., Sonesson M., Wellburn A.R., Coop D., Heide-Jorgensen H.S., Gehrke C., Gwynn-Jones D., Johanson U., Kyparissis A., Levizou E.,

- Nikolopoulos D., Petropoulou Y. & Stephanou M. 1997. The effects of UV-B radiation on European Heathland Species. *Plant Ecology*, 128, 252-264.
11. Kyparissis A., Grammatikopoulos G. & Manetas Y. 1997. Leaf demography and photosynthesis as affected by the environment in the drought semi-deciduous Mediterranean shrub *Phlomis fruticosa* L. *Acta Oecologica*, 18, 543-555.
 12. Manetas Y., Grammatikopoulos G. & Kyparissis A. 1998. The use of the portable, non-destructive, SPAD-502 (Minolta) chlorophyll meter with leaves of varying trichome density and anthocyanin content. *Journal of Plant Physiology*, 153, 513-516.
 13. Grammatikopoulos G., Kyparissis A., Drilias P., Petropoulou Y. & Manetas Y. 1998. Effects of UV-B radiation on cuticle thickness and nutritional value of leaves in two Mediterranean evergreen sclerophylls. *Journal of Plant Physiology*, 153, 506-512.
 14. Kyparissis A., Drilias P. & Manetas Y. 2000. Seasonal fluctuations in photoprotective (xanthophyll cycle) and photoselective (chlorophylls) capacity in eight Mediterranean plant species belonging to two different growth forms. *Australian Journal of Plant Physiology*, 27, 267-274.
 15. Moody S.A., Paul N.D., Bjorn L.O., Callaghan T.V., Lee J., Manetas Y., Rozema J., Gwynn-Jones D., Johanson U., Kyparissis A. & Oudejans A.M.C. 2001. The direct effects of UV-B radiation on *Betula pubescens* litter decomposing at four European field sites. *Plant Ecology*, 154, 27-36.
 16. Grammatikopoulos G., Drilias P., Kyparissis A., Petropoulou Y. and Manetas Y. 2001. Reduction of ambient UV-B radiation does not affect growth but may change the flowering pattern of *Rosmarinus officinalis* L. *Plant Ecology*, 154, 119-122.
 17. Kyparissis A., Drilias P., Grammatikopoulos G., Petropoulou Y. and Manetas Y. 2001. Effects of UV-B radiation and additional irrigation on the Mediterranean Evergreen Sclerophyll *Ceratonia siliqua* L. under field conditions. *Plant Ecology*, 154, 189-193.
 18. Levizou E., Drilias P. & Kyparissis A. 2004. Exceptional photosynthetic performance of *Capparis spinosa* L. under adverse conditions of Mediterranean summer. *Photosynthetica*, 42, 229-235.
 19. Kyparissis A., Grammatikopoulos G. & Manetas Y. 2007. Leaf morphological and physiological adjustments to the spectrally selective shade imposed by anthocyanins in *Prunus cerasifera*. *Tree Physiology*, 27, 849-857.
 20. Iovi K., Kolovou C. & Kyparissis A. 2009. An ecophysiological approach of hydraulic performance for nine Mediterranean species. *Tree Physiology*, 29, 889-900.
 21. Stagakis S., Markos N., Sykioti O. & Kyparissis A. 2010. Monitoring canopy biophysical and biochemical parameters in ecosystem scale using satellite hyperspectral imagery: An application on a *Phlomis fruticosa* Mediterranean ecosystem using multiangular CHRIS/PROBA observations. *Remote Sensing of Environment*, 114, 977-994.
 22. Sykioti O., Paronis D., Stagakis S. & Kyparissis A. 2011. Band depth analysis of CHRIS/PROBA data for the study of a Mediterranean natural ecosystem. Correlations with leaf optical properties and ecophysiological parameters. *Remote Sensing of Environment*, 115, 752-766.
 23. Markos N. & Kyparissis A. 2011. Ecophysiological modeling of leaf level photosynthetic performance for three Mediterranean species with different growth forms. *Functional Plant Biology*, 38, 314-326.

Publications in International Conferences

1. Stagakis S., Markos N., Levizou E. & Kyparissis A. Montreux, Switzerland, April 23-27, 2007. Forest Ecosystem Dynamics using SPOT and MODIS Satellite Images. European Space Agency ENVISAT Symposium.
2. Kyparissis A., Markos N., Stagakis S., Levizou E., Sykioti O. Florence, Italy, September 17-20, 2007. Ecosystem productivity and dynamics issued from multispectral and hyperspectral satellite imagery. Proceedings of SPIE Europe Remote Sensing.
3. O. Sykioti, Paronis D., Kyparissis A., Stagakis S. Frascati, Italy, 17-19 March, 2010. Spectroscopic analysis of a Mediterranean ecosystem using CHRIS/PROBA, *in situ* leaf spectra and plant measurements. ESA Hyperspectral Workshop, ESA ESRIN.
4. Paronis, D., Sykioti, O., Paronis, D., Kyparissis, A. Frascati, Italy, 17-19 March, 2010. Effect of aerosols on narrowband indices and band depths from CHRIS/PROBA: Case study on a *Phlomis fruticosa* ecosystem. ESA Hyperspectral Workshop, ESA ESRIN.
5. Vanikiotis T., Markos N., Stagakis S, Tzotsos A., Sykioti O., Kyparissis A. Edinburgh, Scotland, September 2013. Estimating light use efficiency of a pine and a beech forest from leaf to ecosystem scale using the photochemical reflectance index. European Space Agency, Special Publication SP-722, Living Planet Symposium.

Presentations in Conferences

1. Kyparissis A., Nikolopoulos D., Petropoulou Y. & Manetas Y. Munich, Germany, October 27-29, 1993. Ultraviolet-B (UV-B) radiation effects in two Mediterranean shrubs under field conditions. European Symposium on Effects of Environmental UV Radiation.
2. Kyparissis A. & Manetas Y. Delfi, Greece, October 21-23, 1994. Demography of summer and winter leaves of *Phlomis fruticosa* L. under four different microenvironments. 5th Congress of the Greek Botanical Society.
3. Petropoulou Y., Kyparissis A. & Manetas Y. Delfi, Greece, October 21-23, 1994. Morphological and biochemical avoidance of oxidative stress at the summer leaves of *Phlomis fruticosa* L. 5th Congress of the Greek Botanical Society.
4. Kyparissis A., Grammatikopoulos G. & Manetas Y. Delfi, Greece, October 21-23, 1994. The role of summer leaves of *Phlomis fruticosa* L. 5th Congress of the Greek Botanical Society.
5. Kyparissis A., Drilias P., Grammatikopoulos G. & Manetas Y. Thessaloniki, Greece, September 12-22, 1997. The possible role of xanthophyll cycle in Mediterranean plants with different growth patterns. First Balcan Botanical Congress.
6. Kalatzi S., Drilias P., Kyparissis A. & Manetas Y. Alexandroupolis, Greece, October 1-4, 1998. Heliotropism of *Malva sylvestris* (*Malvaceae*). 7th Congress of the Greek Botanical Society.
7. Grammatikopoulos G., Drilias P., Kyparissis A., Petropoulou Y. and Manetas Y. Halkidiki, Greece, September 18-23, 1999. Natural UV-B radiation does not affect growth but may change the flowering pattern of *Rosmarinus officinalis* L. VIII European Ecological Congress.
8. Kyparissis A., Drilias P., Grammatikopoulos G., Petropoulou Y. and Manetas Y. Halkidiki, Greece, September 18-23, 1999. Effects of UV-B radiation and additional irrigation on the Mediterranean Evergreen Sclerophyll *Ceratonia siliqua* L. under field conditions. VIII European Ecological Congress.

9. Kyparissis A., Levizou E. & Drilias P. Patras, Greece, October 5-8, 2000. *Capparis spinosa* L.: yet it moves! 8th Congress of the Greek Botanical Society.
10. Levizou E. & Kyparissis A. Volos, Greece, 27-29 May 2004. Following the sun: the advantages of diaheliotropism. 26th Scientific Congress of the Greek Society of Biological Sciences.
11. Levizou E. & Kyparissis A. Mitilini, Greece, 18-21 November 2004. The use of satellite image for the study of Mediterranean ecosystem dynamics. Annual Congress of the Greek Ecological Society.
12. Arvaniti E. & Kyparissis A. Ioannina, Greece, 5-8 May 2005. Seasonal fluctuation of photosynthetic performance of *Malva sylvestris* L. and correlation with environmental parameters. 10th Congress of the Greek Botanical Society.
13. Papazis G. & Kyparissis A. Ioannina, Greece, 5-8 May 2005. A study of the effects of plant protection products to the plants that are going to protect. 10th Congress of the Greek Botanical Society.
14. Giannakis K., Levizou E., Liakopoulos G. & Kyparissis A. Ioannina, Greece, 5-8 May 2005. Ecophysiological comparison between traditional and commercial varieties of crop plants. 10th Congress of the Greek Botanical Society.
15. Stagakis Σ. & Kyparissis A. Ioannina, Greece, 5-8 May 2005. Monitoring mountainous ecosystem dynamics in the region of Epirus, Greece using satellite imagery. 10th Congress of the Greek Botanical Society.
16. Markos N. & Kyparissis A. Ioannina, Greece, 5-8 May 2005. Modeling of the photosynthetic performance of Mediterranean plants and correlation with environmental parameters. 10th Congress of the Greek Botanical Society.
17. Kyparissis A. & Levizou E. Vienna, Austria, 17-23 July, 2005. Dynamics of two Mediterranean coastal ecosystems using NDVI from satellite images. XVII International Botanical Congress.
18. Stagakis S., Levizou E. & Kyparissis A. Kusadasi, Turkey, 8-13 November, 2005. Detecting spatio-temporal patterns of ecosystem function in a wide region of Epirus (Greece) using NDVI time series. X European Ecological Congress.
19. Kyparissis A., Markos N., Stagakis S. & Levizou E. Lyon, France, 17-21 July, 2006. Ecophysiology of three forest species: *Fagus sylvatica*, *Quercus frainetto* and *Quercus cerris*. XV Congress of the Federation of European Societies of Plant Biology.
20. Iovi K. & Kyparissis A. Lyon, France, 17-21 July, 2006. Evaluation of Mediterranean plant growth types considering their functional response to water availability. XV Congress of the Federation of European Societies of Plant Biology.
21. Markos N. & Kyparissis A. Lyon, France, 17-21 July, 2006. Modeling whole plant photosynthetic performance in relation to seasonal fluctuation of environmental factors. XV Congress of the Federation of European Societies of Plant Biology.
22. Stagakis S., Levizou E., Markos N., Sykioti O., Elias P., Kontoes Ch., Lolis Ch., Bartzokas A. & Kyparissis A. Lyon, France, 17-21 July, 2006. The use of NDVI time-series for the study of ecosystem dynamics of two deciduous (*Fagus sylvatica*, *Quercus* sp.) and one conifer (*Pinus nigra*) forest. XV Congress of the Federation of European Societies of Plant Biology.
23. Stagakis S., Levizou E., Markos N. & Kyparissis A. Ioannina, Greece, 16-19 November 2006. The use of NDVI timeseries for the study of ecosystem dynamics of Northern Pindus National Park. 3rd Congress of the Greek Ecological Society.

24. Levizou E., Markos N., Stagakis S. & Kyparissis A. Ioannina, Greece, 16-19 November 2006. Seasonal fluctuations of ecophysiological parameters of *Fagus* and *Quercus* forests. 3rd Congress of the Greek Ecological Society.
25. Vanikiotis T., Stagakis S., Kyparissis A. & Manetas Y. Volos, Greece, 9-12 September 2008. A study of phenological parameters of an *Acer platanoides* ecosystem using the MODIS satellite sensor and their correlation with climatic parameters. 4th Congress of the Greek Ecological Society.
26. Levizou E., Markos N., Stagakis Σ. & Kyparissis A. Volos, Greece, 9-12 September 2008. Deciduous forests and climate: effect of temperature and precipitation on plant growth and condition of vegetation. 4th Congress of the Greek Ecological Society.
27. Markos N. & Kyparissis A. Volos, Greece, 9-12 September 2008. Adaptation of the photosynthetic rate in seasonal temperature variations for three species of different functional groups. 4th Congress of the Greek Ecological Society.
28. Siomou A., Stagakis S. & Kyparissis A. Volos, Greece, 9-12 September 2008. Annual rings of *Quercus frainetto*, *Quercus cerris* and *Pinus nigra* and correlation with meteorological parameters. 4th Congress of the Greek Ecological Society.
29. Stagakis S., Markos N., Sykioti O. & Kyparissis A. Volos, Greece, 9-12 September 2008. Estimation of physiological parameters and productivity of a Mediterranean ecosystem with *Phlomis fruticosa* using the satellite hyperspectral sensor CHRIS/PROBA. 4th Congress of the Greek Ecological Society.
30. Levizou E., Gardiakos S. & Kyparissis A. Patras, Greece, 7-10 October 2010. *Phlomis* from space: an ecophysiological story in the space-time continuum. 5th Congress of the Greek Ecological Society.
31. Markos N. & Kyparissis A. Thessaloniki, Greece, 3-6 October 2013. Kok effect as a tool for the assessment of inhibition of mitochondrial respiration in the light – an application example for three forest species of Northern Pindos National Park. 13th Conference of the Greek Botanical Society.
32. Markos N. & Kyparissis A. Thessaloniki, Greece, 3-6 October 2013. Assessment of temperature contribution to productivity – Scaling to space and time. 13th Conference of the Greek Botanical Society.
33. Vanikiotis T., Stagakis S., Markos N. & Kyparrisis A. Thessaloniki, Greece, 3-6 October 2013. Canopy reflectance and photosynthesis. Using PRI to study the rate of photosynthesis in *Pinus nigra*. 13th Conference of the Greek Botanical Society.

Citations

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MEMBERSHIPS

- Federation of European Societies of Plant Biology.
- Greek Botanical Society
- Greek Ecological Society.