

# Pu, Ruiliang

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## **EDUCATION**

- 2000 Ph.D., Cartography & Geographic Information System, conducted at College of Natural Resources (CNR), UC Berkeley, and Chinese Academy of Sciences, China  
Dissertation: An exploratory analysis on *in situ* hyperspectral data of conifer species
- 1985 M.Sc., Forest Management, Remote Sensing in Forestry, conducted at Nanjing Forestry University (NFU), Nanjing, China.  
Thesis: Application of remote sensing techniques in forest environment modeling.
- 1982 B.Sc., Forestry, NFU, Nanjing, China.  
Essay: Aerial photo interpretation for bamboo resource inventory.

## **ACADEMIC AND PROFESSIONAL INTERESTS**

### **Remote Sensing Image Analysis and Application**

- Multi-platform remote sensing analysis in biogeography
- Wildland fire hotspot detection and burn scar mapping
- Retrieval of land surface temperature (LST) from thermal sensors
- Imaging spectrometer data analysis to surface process modeling
- Environmental modeling
- Land use/cover change detection
- Invasive species mapping and monitoring
- Forestland classification and evaluation

### **Geographic Information System Analysis and Application**

- Landscape dynamic planning and evaluating
- Environmental resources management
- Land systems classification
- Natural resources evaluation and monitoring
- Watershed planning and modeling

### **Quantitative Analysis and Modeling Technologies**

- Multivariate and spatial statistical analysis methods
- Geospatial modeling approaches
- Quantitative analysis methods and application
- Neural network analysis in environmental science
- Remote sensing image processing and analysis

- Computer programming in C(VC, C++)/FORTRAN

### **Major Analysis Softwares**

- Advanced PCI Geomatica and ERDAS Imagine image analysis systems
- ESRI ArcGIS analysis softwares
- SAS/Matlab/Splus statistical analysis softwares

## **EXPERIENCES**

### **Teaching**

- 2006 - Assistant Professor, Department of Geography, University of South Florida, courses:
- Remote Sensing of the Environment at introductory level
  - Advanced Remote Sensing at graduate level
  - Research Methods in Geography at undergraduate level
  - Readings in Remote Sensing at graduate level
- 1995-2006 Research Associate, Assistant Research Professor, College of Natural Resources (CNR), The University of California at Berkeley, California, U.S.A.  
Courses, seminar and training:
- ESPM 290: GIS/ remote sensing in public health for undergraduate students
  - ESPM 298: Advanced remote sensing in natural resources for graduate students
  - Hyperspectral remote sensing and its application for graduate students
  - Atmospheric correction to satellite imagery for graduate/undergraduate students.
  - PCI Geomatica, ArcGIS trained to CAMFER's visitors and workers
  - Major GPS equipment and spectroradiometer trained to CAMFER's visitors and workers
  - Guest lectures: Hyperspectral remote sensing in Nanjing University and Beijing Normal University, China, 30 hours each, in 1999 and 2001 respectively, for graduate students and young scholars.
- 1993-1994 Associate Professor, Department of Forestry, NFU, Nanjing, China  
Courses:
- Remote sensing image processing for graduate students
  - Remote sensing in natural resources for graduate and undergraduate students
  - Forest resources management for undergraduate students
- 1985-1992 Assistant Professor, Department of Forestry, NFU, Nanjing, China  
Courses:
- Remote sensing in natural resources for undergraduate students
  - Forest resources management for undergraduate students

### **Research**

- 2006- Assistant Professor, Department of Geography, University of South Florida.
- Co-principal investigator: Wildfire detection and monitoring using polar orbiting environmental satellite data (e.g., NOAA/AVHRR and EOS/MODIS data)

- PI: Urban environmental studies using thermal and optical remote sensing data
  - PI: invasive species detection and evaluation in a terrestrial ecosystem using hyperspectral data
- 2005-2006 Visiting Research Scientist, Earth System Science Interdisciplinary Center, University of Maryland, College Park
- Investigator: biomass burning detection and mapping in North American using NOAA/AVHRR and Terra/MODIS data.
  - Investigator: Thresholds of vegetation change following N deposition in southern California ecosystems
- 1995-2005 Research Associate, Assistant Research professor, CNR, UC Berkeley
- Co-PI: Land surface temperature retrieved from thermal remote sensing images (Landsat/TM/ETM+6, NOAA/AVHRR4&5, Terra/ASTER 13&14 and ITRES/TABI-320) and urban environment studies (e.g., urban heat island phenomenon)
  - Co-PI: NASA EO-1 project, verifying EO-1 data (ALI, Hyperion, LAC) for extracting biophysical and biochemical parameters
  - Investigator: Monitoring of Sudden Oak Death using CASI hyperspectral data; invasive species mapping using CASI data
  - Co-PI: Mapping of historical burn scars (1989 - 2000) of the North America with NOAA/AVHRR data.
  - Investigator: Emission estimation in California through wildland fire hotspot detection and burnt scar mapping with NOAA/AVHRR daily data using PCI EASI scripts and modeling
  - PI: Tree species identification and biochemistry estimation with *in situ* hyperspectral data using artificial neural networks and spectral derivative techniques
  - PI: Irrigate tracts classification and evaluation with Landsat TM imagery and GIS tool
  - PI: Land ecosystems classification with DEM, forestry data using artificial neural networks
  - Co-PI: Wildlife habitat classification with TM data and using maximum likelihood classifier and artificial neural networks as well as GIS tool
- 1994-1995 Visiting Research Scientist, Department of Geomatics Engineering, The University of Calgary, Canada.
- Co-PI: Evaluate the potentials of hyperspectral imagery (CASI and AVIRIS) for estimating forest canopy biochemistry and other ecosystem parameters, such as LAI and crown closure.
- 1992-1994 Associate Professor, Remote Sensing Laboratory, NFU, Nanjing, China
- Co-PI: Exploring and modeling the relationships between vegetation change and environmental elements
  - PI: Assessment of forest landscape types for national parks using remote sensing techniques
- 1990-1992 Visiting Research Scientist, Earth-Observations Laboratory, ISTS, North York, Ontario, Canada.

- Investigator: The Oregon Transect Ecosystem Research project, led by NASA, USA, Analyzing the relationships between hyperspectral image (CASI and AVIRIS) and ecosystem parameters
  - Participate: Imaging spectrometry data calibration
- 1985-1990 Assistant Professor, Remote Sensing Laboratory, NFU, Nanjing, China
- Project leader and PI: Application of remote sensing techniques in protected forest inventory in the coastal zone in China
  - Co-PI: Remote sensing image analysis and application in forest resources
  - Investigator: Application of remote sensing techniques in forest resources analysis in southern china.

### Services

- 1997- Referee for reviewing following journals
- Canadian Journal of Remote Sensing (Canada) 2007-
  - Environmental Monitoring and Assessment (Netherlands) 2006-
  - Remote Sensing of Environment (USA) 2004-
  - IEEE Transactions on Geoscience & Remote Sensing (USA) 2003-
  - Photogrammetric Engineering & Remote Sensing (USA) 2002-
  - Forest Science (USA) 2002-
  - International Journal of Remote Sensing (UK) 1999-
  - Geographic Information Sciences (USA) 1997-

### GUEST POSITIONS

- 2004- • Research Professor, Northeast Institute of Geography and Agricultural Ecology, Chinese Academy of Sciences, Changchun, China.
- 2002- • Research Professor, Institute of Natural Resources and Regional Planning, Chinese Academy of Agricultural Sciences, Beijing, China.
- 2001- • Adjunct Professor, College of Forest Resources and Environment, Nanjing Forestry University, Nanjing, China.

### RESEARCH GRANTS

(Participation or independent application after 2006)

- |                         |  |      |           |         |
|-------------------------|--|------|-----------|---------|
| • R. Pu                 | NOAA-UMD, USA<br>Development of Fire Algorithm with GOES-R ABI Simulated Data                          | Held | \$20,000  | 2007-09 |
| • R. Pu                 | Internal Award, USF<br>Hyperspectral and High Spatial Resolution Data Analysis for mapping Tree Canopy | Held | \$6,953   | 2007-08 |
| • Shawn Landry<br>R. Pu | City of Tampa, FL<br>City of Tampa Urban Ecological Analysis   | Held | \$100,000 | 2007-08 |

### AWARDS

- 2001 Outstanding Service Award, The International Association of Chinese Professionals in Geographic Information Science (CPGIS)
- 1991 Prize of Science Technology, second place, by The Ministry of Forestry of China

- 1991 The best scientific paper from The Association of Remote Sensing in Jiangsu Province, China
- 1987 Prize of Science Technology, second place, by Jiangsu Province, China
- 1988 Prize of Science Technology, third place, by The Ministry of Forestry of China.

### **PROFESSIONAL AFFILIATION**

- |         |   |       |
|---------|---|-------|
| Member, | American Geophysical Union                              | 2005- |
| Member, | Association of American Geographers                     | 2003- |
| Member, | American Society for Photogrammetry & Remote Sensing    | 1995- |
| Member, | The Association of Chinese Professional in GIS (Abroad) | 1994- |
| Member, | Canadian Remote Sensing Society                         | 1991- |

### **PUBLICATIONS**

#### **Manuscripts submitted for review:**

- Pu, R.**, Z. Li, S. Kondragunta, G. Stephens, Y. Song., D. Mcnamara, and M. Ruminski, 2007, An Analysis of the NOAA's Fire Identification, Mapping, and Monitoring Algorithm (FIMMA) Fire Product Generated with 2004-05 AVHRR Data across North America, *Remote Sensing of Environment*.

#### **Articles in press (accepted):**

- Yu, Q., P. Gong, Y.Q. Tian, and **R. Pu**, 2007, Factors affecting spatial variation of classification uncertainty in an object-based vegetation mapping, *Photogrammetric Engineering and Remote Sensing*, (accepted).
- Pu, R.**, P. Gong, R. Michishita, and T. Sasagawa, 2007, Spectral Mixture Analysis for Mapping Abundance of Urban Surface Components from the Terra/ASTER Data, *Remote Sensing of Environment*. (accepted)
- Pu, R.**, P. Gong, Y. Tian, X. Miao and R. Carruthers, 2007, Invasive Species Change Detection Using Artificial Neural Networks and CASI Hyperspectral Imagery, *Environmental Monitoring and Assessment*. (in press)
- Pu, R.**, P. Gong, Y. Tian, X. Miao and R. Carruthers, 2007, Using Classification and NDVI Differencing Methods for Monitoring Sparse Vegetation Coverage: A Case Study of Saltcedar in Nevada, USA, *International Journal of Remote Sensing*. (accepted)
- Pu, R.**, N. M. Kelly, Q. Chen and P. Gong, 2007, Spectroscopic determination of health levels of Coast Live Oak (*Quercus agrifolia*) Leaves, *Geocarto International*. (in press)
- Miao, X., P. Gong, **R. Pu**, R. I. Carruthers, J. S. Heatond, 2006, Applying Class-based Feature Extraction Approaches for Supervised Classification of Hyperspectral Imagery, *Canadian Journal of Remote Sensing* (accepted)
- Pu, R.**, M. Kelly, G. L. Anderson and P. Gong, 2006, Using CASI hyperspectral imagery to detect mortality and vegetation stress associated with a new hardwood forest disease, submitted to *PE&RS*. (in press)

#### **Refereed Articles:**

- [37] Miao, X., P. Gong, S. Swope, **R. Pu**, R. Carruthers, G. L. Anderson, 2007, Detection of Yellow Starthistle through Band Selection and Feature Extraction from Hyperspectral Imagery, *PE & RS*. 73(9):1005-1015.
- [36] **Pu, R.**, Z. Li, P. Gong, I. Csiszar, R. Fraser, W.-M. Hao, S. Kondragunta, and F. Weng, 2007, Development and Analysis of a 12-year Daily 1-km Forest Fire Data across the North America from NOAA/AVHRR Data, *Remote Sensing of Environment*. 108:198-208.

- [35] Li, Z., J. Jin, P. Gong and **R. Pu**, 2006, Use of Satellite Remote Sensing Data for Modeling Carbon Emissions from Fires: A Perspective in North America (Chapter 18), in Qu et al. (Eds), *Earth Science Satellite Remote Sensing*, Springer-Verlag, 337-356.
- [34] **Pu, R.**, P. Gong, R. Michishita, and T. Sasagawa, 2006, Assessment of Multi-Resolution and Multi-Sensor Data for Urban Surface Temperature Retrieval, *Remote Sensing of Environment*, 104:211-225.
- [33] Miao, X., P. Gong, S. Swope, **R. Pu**, R. Carruthers, G. L. Anderson, J. S. Heaton and C. R. Tracy, 2006, Estimation of yellow starthistle abundance through CASI-2 hyperspectral imagery using linear spectral mixture models, *Remote Sensing of Environment*, 101(3):329-341.
- [32] Gong, P., **R. Pu**, Z. Li, N. Clinton and Lisa M. Levien, 2006, An integrated approach to wildland fire mapping of California, USA using NOAA/AVHRR data, *PE & RS*, 72(2):139-150.
- [31] **Pu, R.**, Q. Yu, P. Gong and G. S. Biging, 2005, EO-1 Hyperion, ALI and Landsat 7 ETM+ data comparison for estimating forest crown closure and leaf area index, *International Journal of Remote Sensing*, 26(3):457-474.
- [30] Clinton, N., P. Gong and **R. Pu**, 2004, Evaluation of wildfire mapping with NOAA/AVHRR data by land cover types and eco-regions in California, *Geographic Information Sciences*, 10(1):10-19.
- [29] **Pu, R.**, L. Foschi, and P. Gong, 2004, Spectral feature analysis for assessment of water status and health level of coast live oak (*Quercus Agrifolia*) leaves, *International Journal of Remote Sensing*, 25(20):4267-4286.
- [28] **Pu, R.**, P. Gong, Z.Q. Li, J. Scarborough, 2004, A dynamic algorithm for wild land burned scar detection using NOAA AVHRR data, *International Journal of Wildland Fire*, 13:275-285.
- [27] **Pu, R.** and P. Gong, 2004, Determination of burnt scars using logistic regression and neural network techniques from a single post-fire Landsat-7 TM imagery, *PE&RS*, 70(7): 841-850.
- [26] **Pu, R.** and P. Gong, 2004, Wavelet transform applied to EO-1 hyperspectral data for forest LAI and crown closure mapping, *Remote Sensing of Environment*, 91:212-224.
- [25] **Pu, R.** and P. Gong, 2003, Spectral feature analysis for estimation of water status of coast live oak (*Quercus agrifolia*) leaves, *Journal of Remote Sensing* (China), Supplement, 7:165-173.
- [24] Gong, P. and **R. Pu**, 2003, LAI mapping with surface reflectance retrieved from ALI, Hyperion and AVIRIS, *Journal of Remote Sensing* (China), Supplement, 7:174-187.
- [23] **Pu, R.**, P. Gong and G. S. Biging, 2003, Simple calibration of AVIRIS data and LAI mapping of forest plantation in southern Argentina, *International Journal of Remote Sensing*, 24(23): 4699-4714.
- [22] **Pu, R.**, B. Xu, P. Gong, 2003, Oakwood crown closure estimation by unmixing of Landsat TM data, *International Journal of Remote Sensing*, 24(22): 4433-4445.
- [21] Gong, P., **R. Pu**, G. S. Biging and M. R. Larrieu, 2003, Estimation of forest leaf area index using vegetation indices derived from Hyperion hyperspectral data, *IEEE Transactions on Geoscience and Remote Sensing*, 41(6):1355-1362.
- [20] **Pu, R.**, P. Gong, G. S. Biging, and M. R. Larrieu, 2003, Extraction of red edge optical parameters from Hyperion data for estimation of forest leaf area index, *IEEE Transactions on Geoscience and Remote Sensing*, 41(4):916-921.
- [19] **Pu, R.**, S. Ge, N.M. Kelly, P. Gong, 2003, Spectral absorption features as indicators of water status in *Quercus Agrifolia* leaves, *International Journal of Remote Sensing*, 24(9):1799-1810
- [18] Chen, J., P. Gong, C. He, **R. Pu**, P. Shi, 2003, Land use/cover change detection using improved change vector analysis, *PR&RS*, 69(4):369-379.
- [17] Xu, B., P. Gong, **R. Pu**, 2003, Crown closure estimation of oak savannah in a dry season with Landsat TM imagery: Comparison of Various Indices through Correlation Analysis, *International Journal of Remote Sensing*, 24(9):1811-1822.
- [16] Pan, Y., Li, X., P. Gong, C. He, P. Shi, **R. Pu**, 2003, An integrative classification of vegetation in China with NOAA/AVHRR and vegetation-climate indices of Holdridge life zone, *International Journal of Remote Sensing*, 24(5):1009-1027.
- [15] Li, Z., R. Fraser, J. Jin, A. A. Abuelgasim, I. Csizar, P. Gong, **R. Pu**, and W. Hao, 2003, Evaluation of algorithms for fire detection and mapping across North America from satellite, *Journal of Geophysical Research*, 108(D2):4076-4089.
- [14] Gong, P., **R. Pu**, and R. C. Heald, 2002, Analysis of in situ hyperspectral data for nutrient estimation of giant sequoia, *International Journal of Remote Sensing*, 23(9):1827-1850.

- [13] Gong, P., **R. Pu**, and B. Yu, 2001, Conifer species recognition: effect of data transformation, *International Journal of Remote Sensing*, 22(17):3471-3481.
- [12] Tian, Q., Q. Tong, **R. Pu**, X. Guo, and C. Zhao, 2001, Spectroscopic determination of wheat water status using 1650-1850 nm spectral absorption features, *International Journal of Remote Sensing*, 22(12):2329-2338.
- [11] **Pu, R.** and P. Gong, 2000, Band selection from hyperspectral data for conifer species identification, *Geographic Information Sciences*, 6(2):137-142.
- [10] Yu, B., M. Ostland, P. Gong, and **R. Pu**, 1999, Penalized linear discriminant analysis of in situ hyperspectral data for conifer species recognition, *IEEE Transactions on Geoscience and Remote Sensing*, 37(5):2569-2577.
- [9] Gong, P., G. S. Biging, S. M. Lee, X. Mei, Y. Sheng, **R. Pu**, B. Xu, K. P. Schwarz, and M. Mostafa, 1999, Photo cometrics for forest inventory, *Geographic Information Sciences*, 5(1):9-14.
- [8] **Pu, R.** and P. Gong, 1998, Predicting land-cover changes with gray systems theory and multitemporal aerial photographs, *Geographic Information Sciences*, 4(1-2):73-79.
- [7] Gong, P., **R. Pu**, and B. Yu, 1997, Conifer species recognition: an exploratory analysis of *in situ* hyperspectral data, *Remote Sens. Environ.*, 62:189-200.
- [6] Gong P., **R. Pu**, J. Chen, 1996, Mapping ecological land systems and classification uncertainties from digital elevation and forest-cover data using neural networks, *P. E. & R. S.*, 62(11):1249-1260.
- [5] Gong, P., **Pu, R.**, and Miller, J. R., 1995, Coniferous forest leaf area index estimation along the Oregon Transect using Compact Airborne Spectrographic Imager data, *P. E. & R. S.*, 61(9):1107-1117.
- [4] Matson, P. A., Johnson, L. F., Billow, C. B., Miller, J. R., and **Pu, R.**, 1994, Seasonal patterns and remote spectral estimation of canopy chemistry across the Oregon Transect, *Ecol. Appl.*, 4(2):280-298.
- [3] Gong, P., **Pu, R.** and Miller, J. R., 1992, Correlating leaf area index of ponderosa pine with hyperspectral CASI data, *Canadian J. of Remote Sensing*. 18(4): 275-282.
- [2] **Pu, R.** and Fang, Y., 1992, Application of remote sensing techniques to forest site survey, *Geocarto International*, 7(3):19-24.
- [1] **Pu, R.** and Miller, J. R. 1991, Classification and evaluation of a shelter forest site in a coastal area using remote sensing techniques, *Canadian J. of Remote Sensing*, 17(4):323-331.

### Refereed Articles originally in Chinese:

- [22] Pu, R. and Z. Chen, 2005, Review and prospective on the information inversion methods of hyperspectral remote sensing data, *Resource Remote Sensing and Digital Agriculture*, (a book), Eds H. Tang and Q. Zhou, Agriculture Press, Beijing, China, p211-223.
- [21] Pu, R. and Z. Chen, 2005, The application of hyperspectral remote sensing in agriculture review and prospective, *Resource Remote Sensing and Digital Agriculture*, (a book), Eds H. Tang and Q. Zhou, Agriculture Press, Beijing, China, p224-239.
- [20] Pu, R. and P. Gong, 2000, *Hyperspectral Remote Sensing and Its Applications*, (a book), High Education Press, Beijing, China.
- [19] Pu, R., P. Gong, and R. Yang, 1999, Forest yield prediction with an artificial neural network and multiple regression, *Chinese Journal of Applied Ecology*, 10(2):129-134.
- [18] Pu, R., 1998, Hyperspectral remote sensing in vegetation (1-03-12), in Cheng, S. Ed., *Dictionary of Earth System Science*, Science Press, Beijing, China, pp. 180-181.
- [17] Gong, P., R. Pu, and B. Yu, 1998, Conifer species recognition with seasonal hyperspectral data, *Journal of Remote Sensing*, China, 2(3):211-217.
- [16] Pu, Ruiliang and Peng Gong, 1997, Relationships between forest biochemical concentrations and CASI data along the Oregon Transect, *Journal of Remote Sensing*, China, 1(2):115-123.
- [15] Gong, P., P. Shi, R. Pu, and H. Guo, 1996, *Earth Observation Techniques and Earth System Science*, (a book) Science Press, Beijing, China.
- [14] Pu, R., Yang, J., Liu, Y., Wan, Z., and Li, M., 1994, Tabulation of quantification color infrared aerial photo site-index for *Pinus Massoniana* In Mt. Zijin, *J. Of Zhejiang Forestry College*. China, 11(1):64-68.
- [13] Pu, R., Gong, P., and Miller, J. R., 1993, Spectral Derivative Analysis For Ponderosa Pine Leaf Area Index Estimation, *Remote Sensing Of Environment*, China, 8(2):112-125.
- [12] Pu, R., Wang, H. and Hu, J., 1993, An experiment on the use of color infrared aerial photo in forest ecology, *J. Of South-Center Forestry Inventory Of China*, (4):50-53.

- [11] Pu, R., Gong, P. and Miller, J. R., 1993, Estimation of coniferous forest leaf area index along the Oregon Transect using CASI data, *J. Of Nanjing Forestry University(NFU)*, China, 17(1):41-48.
- [10] Pu, R., 1993, Using remote sensing imageries for mapping protected forest site-type on the coastal zone, *J. Of South-Center Forestry Inventory Of China*, (1): 56-60.
- [9] Pu, R., 1992, A discussing on application of remote sensing techniques for forest site classification and appraisal on the coast in China, *J. Of South-Center Forestry Inventory Of China*, (1):51-54.
- [8] Pu, R. and Wang, Y. 1990, Site classification and evaluation on a coastal area of rock-estuary using aerial photo, *J. Of South-Center Forestry Inventory Of China*, (4):39-46.
- [7] Pu, R., Wang, X., Zheng, X., Ding, Y., Zhang J. and Hu, J., 1990, Application of remote sensing Techniques in protected forest site classification and evaluation on the coast In China, *J. Of NFU*, China,14(3):7-14.
- [6] Pu, R., 1990, Methodology of extracting optimal site information from Landsat-TM remote sensing images, *J. Of Fujian College Of Forestry*, China, 10(2):152-158.
- [5] Pu, R., 1987, Application of remote sensing techniques in forest site survey, *J. of NFU*, China, 11(4):39-47.
- [4] Pu, R. and Zhu, Z., 1987, Application of aerial photography to the inventory of bamboo resources, *Bamboo Research*, China, (2):44-51.
- [3] Pu, R., 1987, An experiment of fuzzy clustering analysis for forest site classification by aerial photo Interpretation, *J. Of Forest Resource Management*, China, (1):41-46.
- [2] Pu, R., 1986, An experiment on the use of aerial photographs in forest soil classification, *J. Of South-Center Forestry Inventory Of China*, (4), 19-22.
- [1] Pu, R., 1985, A study of the effects of environment conditions on aerial seeding forest using photo Interpretation methods, *J. Of South-Center Forestry Inventory Of China*, (1):1-6.

### Conference Papers:

- [21] Pu, R., P. Gong, and R. Michishita, 2007, Spectral Mixture Analysis for Mapping Abundance of Urban Surface Components from the Terra/ASTER Data, *The Proceedings of ASPRS 2007Annual Conference*, May 7-11, 2007, Tampa, FL, USA.
- [20] Pu, R., P. Gong, Y. Tian, X. Miao and R. Carruthers, 2007, Invasive Species Change Detection Using Artificial Neural Networks and CASI Hyperspectral Imagery, *The proceedings of AAG annual meeting'07*, April 17-21, 2007, Sanfrancisco, CA, USA.
- [19] Pu, R., Z. Li, P. Gong, R. Fraser, I. Csizar, and W. Hao, 2005, Spatial and Temporal Patterns of Forest Fires in North America as Determined from 12 Years of Daily AVHRR Data, *The proceedings of AGU Meeting'05*, Dec. 5-9, 2005, San Francisco, USA.
- [18] Pu, R., P. Gong, Y. Tian, X. Miao and R. Carruthers, 2005, Invasive species mapping using CASI hyperspectral data at Lovelock Site, Nevada, USA, *The proceedings of AAG annual meeting'05*, April 4-9, 2005, Denver, USA.
- [17] Pu, R., M. Kelly, G. L. Anderson and P. Gong, 2004, A Multilevel Classification Scheme of CASI Data for Detecting Sudden Oak Death, *The proceedings of AAG annual meeting'04*, March 15-19, 2004, Philadelphia, USA.
- [16] Pu, R., P. Gong, G. S. Biging and M. R. Larriue, 2002, Estimation of forest leaf area index using vegetation indices and read edge parameters with Hyperion hyperspectral data, *The Proceedings of Geoinformatics'02 Conference*, June 1-3, 2002, Nanjing, China.
- [15] Pu, R., P. Gong and G. S. Biging, 2002, Leaf area index mapping using retrieved reflectance from AVIRIS data, in *Proceedings of AVIRIS Workshop 2002*, March 3 - 8, 2002, Los Angeles, USA.
- [14] Pu, R., P. Gong, G. S. Biging and M. R. Larriue, 2002, Retrieval of surface reflectance and LAI mapping with data from ALI, Hyperion and AVITRIS, in *Proceedings of IGARSS'02*, June 24-28, Toronto, Canada.
- [13] Li, X., P. Gong; R. Pu, P. Shi, 2001, Comparison of two vegetation classification techniques in China based on NOAA/AVHRR data and climate-vegetation indices of the Holdridge life zone, *IGARSS '01. IEEE 2001 International*, v4:1895 -1897, Australia..
- [12] Pu, R., S. Ge, N. M. Kelly, and P. Gong, 2001, Correlation analysis of hyperspectral absorption features with the water status of coast live oak leaves, in *Proceedings of SPIE'01*, July 29-August 3, San Diego, USA.
- [11] Gong, P., R. Pu, Z. Li, and J. Scarborough, 2001, An integrated approach for wildland fire mapping in California, USA, using NOAA/AVHRR data, in *Proceedings of IGARSS'01*, July, 2001, Australia.

- [10] Pu, R. and P. Gong, 2000, Band selection from hyperspectral data for conifer species identification, *The Proceedings of Geoinformatics'00 Conference*, Monterey Bay, June 21-23, 2000, pp.139-146.
- [9] Pu, R., P. Gong and R. C. Heald, 1999, *In situ* hyperspectral data analysis for nutrient estimation of Giant Sequoia, *JGARSS'99 Proceedings*, 28 June - 2 July, 1999, Hamburg, Germany, pp.395-397.
- [8] Pu, R., B. Xu, and P. Gong, 1998, Spectral analysis of conifer leaves at different ages, 1998, *The Proceedings of Geoinformatics'98 Conference*, Beijing, 17-19 June, 1998, pp. 221-228.
- [7] Gong, P., G. S. Biging, S. M. Lee, X. Mei, Y. Sheng, R. Pu, B. Xu, K. P. Schwarz, and M. Mostafa, 1998, Photo ecometrics for forest inventory, *Presented at the International Forum on Automated Interpretation of High Spatial Resolution Digital Imagery for Forestry, Natural resources Canada*, Canadian Forest Service, Victoria, BC, Feb. 10-12, 1998.
- [6] Pu, R., Gong, P., Truex, R., Barrett, R. H., and Yang, R., 1997, Measuring the importance of input variables in neural network analysis, *Proceedings of 1997 ACSM/ASPRS, Technical Paper Volume 3: Remote Sensing & Photogrammetry*, April 7-10, 1997, Seattle, Washington, 727-732.
- [5] Pu, R. and Gong, P., 1996, Band selection using fuzzy clustering analysis for tree species identification, *Proceedings Of Geoinformatics'96*, West Palm Beach, Florida USA, April 26-28, 464-471.
- [4] Wang, D. X., Pu, R., Gong, P., and Yang, R., 1995, Predicting Forest Yield With An Artificial Neural Network And Multiple Regression, *Proceedings Of Geoinformatics'95*, Hong Kong, May 26-28, Vol. 2, 771-780.
- [3] Freementle, J. R., Pu, R. and Miller, J. R., 1992, Calibration Of Imaging Spectrometer Data Of Reflectance Using Pseudo- Invariant Features, *Proceedings Of The Fifteenth Canadian Symposium On Remote Sensing*, Toronto, Ontario, 1-4 June, 452-457.
- [2] Pu, R. and Miller, J. R. 1991, Classification And Evaluation Of A Shelter Forest Site In A Coastal Area Using Remote Sensing Techniques, *Proceedings Of The Fourteenth Canadian Symposium On Remote Sensing*, Calgary, Alberta, Canada, 1-4 May , 240-243.
- [1] Pu, R., 1991, Remote sensing method of site resource inventory on the coastal zone, The Society of Forestry Graduate in Northern America, Fredericton, New Brunswick, Canada, February 14-18.