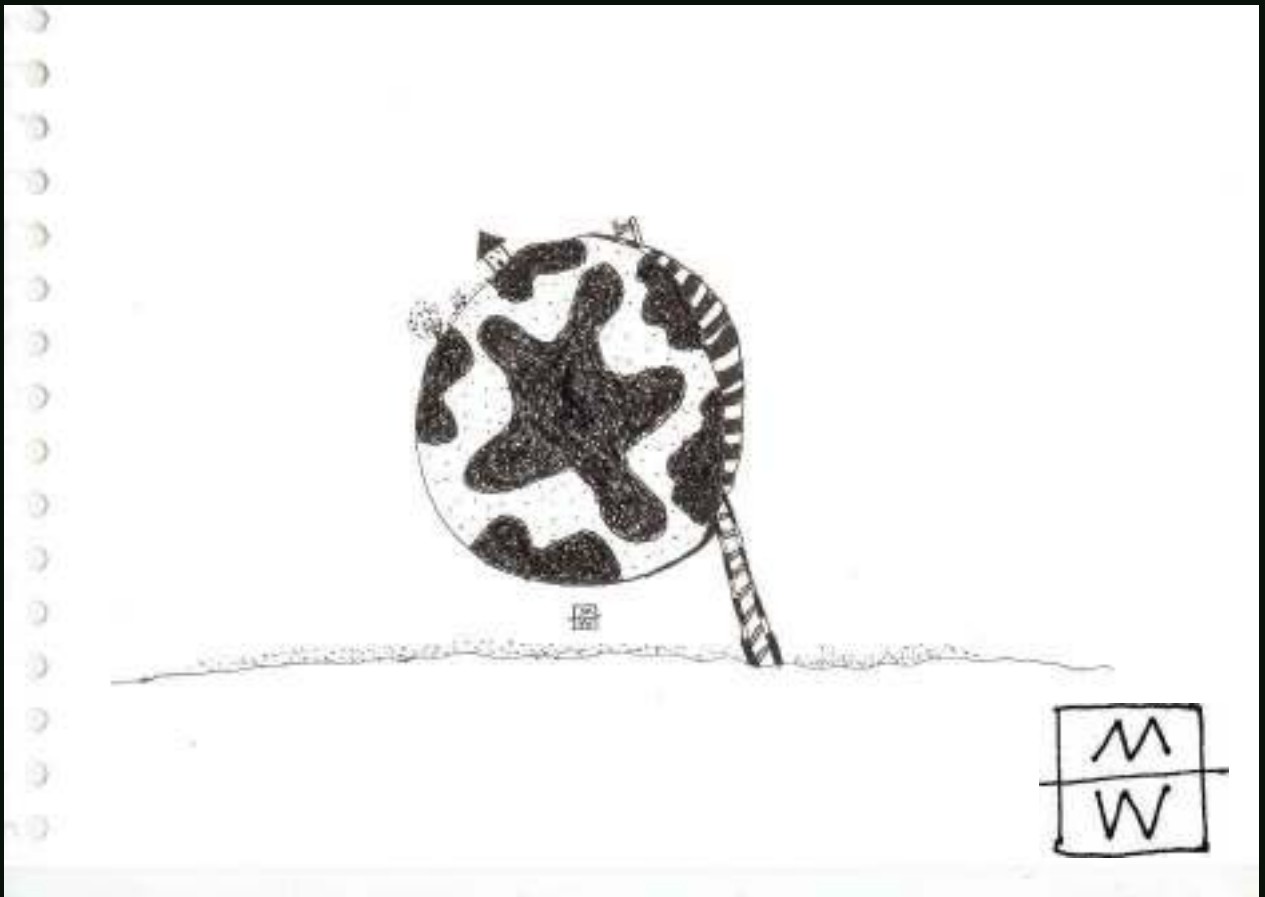


Małgorzata Gajos-Gržetić

# GIS Bibliography



Polish-Croatian Cooperation 2014-2018

Sosnowiec 2019



GIS Bibliography  
Polish-Croatian Cooperation  
2014-2018



**Małgorzata Gajos-Gržetić**

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**Polish-Croatian Cooperation**  
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Justyna Przybylska  
Małgorzata Gajos-Gržetić

*General and Technical Edition:*

Małgorzata Gajos-Gržetić

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Małgorzata Gajos-Gržetić

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## Preface

The “GIS Bibliography. Polish-Croatian Cooperation 2014-2018” book is the supplement to the book “GIS Bibliography. Polish-Croatian Cooperation 1994-2013”. Presents the bibliography of a body of publications, which is the result of the next five years (2014-2018) of international Geographical Information Systems (GIS) conferences organized during 25 years (1994-2018) of cooperation, mainly between Polish and Croatian experts and institutions. Joint international research and publications in the area of geoinformation and GIS are described. The bibliography is presented by subject. There are 12 subjects, in each of them bibliographic descriptions are ordered alphabetically by surname of author. The bibliography consist of 160 bibliographic descriptions, including 142 article descriptions and 18 descriptions of multiauthor monograph. The numbering of bibliographic descriptions is a continuation of the numbering from Bibliography 1994-2013, this is why it starts with the number 880. An index of authors is created along with bibliographic descriptions. Publications have been elaborated by 252 authors. The book contains annex with covers of 21 publications - achievements of the 5 conferences (the source of the covers is the website <http://www.gis.us.edu.pl/>).

Presenting the achievements of 5 years (2014-2018) of Polish-Croatian publishing cooperation in the field of GIS, I encourage readers to read the first part of the bibliography “GIS Bibliography. Polish-Croatian Cooperation 1994-2013”, published at the website <http://www.gis.us.edu.pl>, under the link <http://www.gis.us.edu.pl/index.php/gis-bibliography/gis-bibliography-1994-2013>.

*Małgorzata Gajos-Gržetić*



## **Development of Polish-Croatian GIS cooperation**

**2014-2018**

The cooperation is based on events such as conferences, exhibitions, workshops, seminars, lectures, which are held mainly in Croatia and Poland alternately, projects and publishing activities.

The conference participants come mostly from Croatia and Poland. Over the years however, the body of participants has been increased by experts from England, Germany, Austria, Ukraine, Czech Republic, Slovakia, Italy and other countries.

The aim of the book is to present achievements of scientific publication during 5 years (2014-2018) of Polish-Croatian cooperation in the range of GIS, in the form of a bibliography. Table 1 contains a list of 5 conferences and 21 conference publication descriptions. The covers of those publications can be found in an annex. The publications occurred in various forms: printed one, CD-ROM and website.

During last 5 years (2014-2018) of cooperation scientific works such as monographs and conference proceedings have been published.

The subject matter of the conferences in individual years was similar, although slightly modified. Table 2 presents GIS conference's topics in the period between 2014 and 2018 and a number of papers in each subject range.

Table 1. Conferences and publications of Polish-Croatian cooperation (2014-2018)

Title of the conference	Place & date of the conference	Organisers of the conference	Title of the publication
GIS Odyssey 2014	Croatia: Crikvenica, Rijeka & Krk September 1-5, 2014	HIZ - GIS Forum, Croatia; Institute of Oceanography and Fisheries, Croatia; Hydrographic Institute of the Republic of Croatia; University of Warmia and Mazury in Olsztyn, Poland; University of Silesia in Katowice, Poland; Real Estate Scientific Society, Poland; SILGIS Association, Poland; Cardinal Stefan Wyszyński University, Poland	Problems of Valuation and Real Estate Management by Value <sup>1</sup> ; Modern Systems of Land Administration and Real Estate Management <sup>2</sup> ; Directions for Land Management in Rural Area <sup>3</sup> ; GIS & Geodesy <sup>4</sup> ; Application of Geographic Information System Tools in a Broad Natural Science <sup>5</sup> ; Spatial Data in Wide Geospace <sup>6</sup>
GIS Odyssey 2015	Italy: Perugia, September 7-11, 2015	HIZ - GIS Forum, Croatia; Institute of Oceanography and Fisheries, Croatia; University of Warmia and Mazury in Olsztyn, Poland; University of Silesia in Katowice, Poland; Real Estate Scientific Society, Poland; SILGIS Association, Poland; Cardinal Stefan Wyszyński University, Poland	Real Estate Valuation for Special Purposes <sup>7</sup> ; Geoinformation Technology and Data Models <sup>8</sup> ; Modern Geodetic Techniques in Spatial Measurement <sup>9</sup> ; Real Estate Management. Spatial analysis supported by GIS tools <sup>10</sup> ; New Challenges for Land Information Systems in the Light of European Standards <sup>11</sup> ; Changes in Rural Areas in Poland <sup>12</sup> ; Rural Areas Management <sup>13</sup> ; GIS and Water Resources <sup>14</sup> ; GIS and Various Approaches of Safety Management <sup>15</sup> ; Access to Spatial Data and its Limitations Legal Aspects <sup>16</sup> ; Enhancing a City via GIS: Issues and Challenges <sup>17</sup> ; Smart City <sup>18</sup>
GIS Odyssey 2016	Italy: Perugia, September 5-9, 2016	HIZ - GIS Forum, Croatia; Institute of Oceanography and Fisheries, Croatia; AGH University of Science and Technology, Cracow, Poland; University of Warmia and Mazury in Olsztyn, Poland; University of Silesia in Katowice, Poland; Real Estate Scientific Society, Poland; SILGIS Association, Poland; Cardinal Stefan Wyszyński University, Poland	Geographic Information Systems Conference and Exhibition "GIS ODYSSEY 2016" <sup>19</sup>

GIS Odyssey 2017	Italy: Trento – Vattaro September 4-8, 2017	HIZ - GIS Forum, Croatia; Institute of Oceanography and Fisheries, Croatia; Cardinal Stefan Wyszyński University in Warsaw, Poland; University of Silesia in Katowice, Poland; Real Estate Scientific Society, Poland; SILGIS Association, Poland	Geographic Information Systems Conference and Exhibition "GIS ODYSSEY 2017" <sup>20</sup>
GIS Odyssey 2017 (Expert session)	Poland: Warsaw May 18-19, 2017	Cardinal Stefan Wyszyński University in Warsaw, Poland; Università degli Studi di Bari Aldo Moro, Italy; Croatian GIS Association; NCPI – Law and Informatics Research Center, Poland; SILGIS Association, Poland	
GIS Odyssey 2018	Italy: Perugia, September 10-14, 2018	HIZ - GIS Forum, Croatia; Institute of Oceanography and Fisheries, Croatia; University of Perugia, Italy; Cardinal Stefan Wyszyński University in Warsaw, Poland; University of Silesia in Katowice, Poland; SILGIS Association, Poland	Geographic Information Systems Conference and Exhibition "GIS ODYSSEY 2018" <sup>21</sup>

<sup>1</sup> Żróbek S., Kucharska-Stasiak E., Trojanek M., Adamiczka J., Budzyński T., Cellmer R., Dąbrowski J., Jasińska E., Preweda E., Sajnog N. *Current Problems of Valuation and Real Estate Management by Value*. R. Cellmer (ed.). Croatian Information Technology Society – GIS Forum, Zagreb 2014, 97 pp.

<sup>2</sup> Buśko M., Bydłosz J., Dawidowicz A., Gross M., Kwartnik-Pruc A., Pietrzak L., Przewięzlikowska A., Trzcńska S., Żróbek-Różańska A., Żróbek R. *Modern Systems of Land Administration and Real Estate Management*. A. Dawidowicz (ed.). Croatian Information Technology Society – GIS Forum, Zagreb 2014, 86 pp.

<sup>3</sup> Dudzińska M., Jasińska E., Kocur-Bera K., Leń P., Preweda E., Sajnog N., Sobolewska-Mikulska K., Steinsholt H., Walacik M., Wójcik J. *Directions for Land Management in Rural Areas*. K. Sobolewska-Mikulska (ed.). Croatian Information Technology Society – GIS Forum, Zagreb 2014, 75 pp.

<sup>4</sup> Biłozor A., Cichociński P., Cieślak I., Dadić V., Dawidowicz K., Ivanković D., Gerus-Gościewska M., Hanus P., Kowalczyk A., Kowalczyk K., Krzyżek R., Parzych P., Szuniewicz K., Vučić I. *GIS & Geodesy*. P. Parzych (ed.). Croatian Information Technology Society – GIS Forum, Zagreb 2014, 78 pp.

<sup>5</sup> Żróbek-Sokolnik A., Dynowski P., Stańczuk-Gałwiazek M., Kryszk H., Kurowska K., Dudzińska M., Kocur-Bera K., Chybicki A., Brunecki K., Kulawiak M. *Application of Geographic Information System Tools in a Broad Natural Science*. A. Żróbek-Sokolnik (ed.). Croatian Information Technology Society – GIS Forum, Zagreb 2014, 113 pp.

<sup>6</sup> Adamczyk T., Begović V., Bieda A., Bielecka E., Bugaj P., Dawidowicz A., Džunić I., Gajos M., Jankowska M., Kereković D., Krukowska K., Kryszk H., Kurowska K., Parzych P., Rahmonov O., Schrunck I., Wójciak E., Żróbek R. *Spatial Data in Wide Geospace*. R. Żróbek, A Dawidowicz (ed.). Croatian Information Technology Society – GIS Forum, Zagreb 2014, 121 pp.

<sup>7</sup> Foryś I., Konowalczyk J., Krajewska M., Kucharska-Stasiak E., Parzych P., Tanaś J., Trojanek M., Wójciak E., Żróbek S. (2015). *Real Estate Valuation for Special Purposes*. R. Cellmer, S. Żróbek (ed.). Croatian Information Technology Society – GIS Forum, Zagreb, 180 pp.

<sup>8</sup> Cichociński P., Dawidowicz A., Mika M., Ogryzek M., Salata T, Siejka M., Ślusarski M., Wolny A. (2015). *Geoinformation Technology and Data Models*. A. Dawidowicz, A. Wolny (ed.). Croatian Information Technology Society – GIS Forum, Zagreb, 111 pp.

<sup>9</sup> Bednarczyk M., Biryło M., Dawidowicz K., Hlotov V., Kowalczyk K., Kwartnik-Pruc A., Pelc-Mieczkowska R., Siejka Z., Tomaszewski D, Wróbel A, (2015). *Modern Geodetic Techniques in Spatial Measurement*. K. Dawidowicz (ed.). Croatian Information Technology Society – GIS Forum, Zagreb, 102 pp.

<sup>10</sup> Muczyński A., Żróbek R., Foryś I., Kempa O., Bieda A., Pęska A., Kazak J., Szebrański S., Renigier-Biłozor M., Biłozor A. (2015). *Real Estate Management. Spatial Analysis Supported by GIS Tools*. A. Muczyński (ed.). Croatian Information Technology Society – GIS Forum, Zagreb, 113 pp.

- <sup>11</sup> Dawidowicz A., Klimach A., Sajnog N., Lewandowicz E., Kwiecień J., Szopińska K., Łuczyński R., Banaszek A. (2015). *New Challenges for Land Information Systems in the Light of European Standards*. A. Dawidowicz (ed.). Croatian Information Technology Society – GIS Forum, Zagreb, 90 pp.
- <sup>12</sup> Budzyński T., Goraj S., Gwiazdzińska-Goraj M., Krupowicz W., Szczepańska A., Wasilewicz-Pszczółkowska M., Wrzosek M. (2015). *Changes in Rural Areas in Poland. Spatial and Technical Aspects*. T. Budzyński (ed.). Croatian Information Technology Society – GIS Forum, Zagreb, 88 pp.
- <sup>13</sup> Kurowska K., Kryszk H., Cymerman R., Ogryzek M., Sobolewska-Mikulska K., Stańczuk-Gałwiazek M., Marks-Bielska R. (2015). *Rural Areas Management*. K. Kurowska (ed.). Croatian Information Technology Society – GIS Forum, Zagreb, 102 pp.
- <sup>14</sup> Bruniecki K., Chybicki A., Dadić V., Gržetić Z., Ivanković D., Kulawiak M., Łubniewski Z., Sobieraj A., Styblińska M., Vučić I., Wieczorek B. (2015). *GIS and Water Resources*. V. Dadić (ed.). Croatian Information Technology Society – GIS Forum, Zagreb, 96 pp.
- <sup>15</sup> Bajerowski T., Chojka A., Gerus-Gościewska M., Gościewski D., Kowalczyk A., Krajewska M., Parzyński Z., Szopińska K., Świtała K. (2015). *GIS and Various Approaches of Safety Management*. A. Kowalczyk (ed.). Croatian Information Technology Society – GIS Forum, Zagreb, 111 pp.
- <sup>16</sup> Szpor G., Galetta D.–U., Trzos M., Badowski M., Gryszczyńska A., Chromicka D., Drobek P., Solodovnik I., Jankowska M., Kulawiak M. (2015). *Access to Spatial Data and its Limitations. Legal Aspects*. G. Szpor, A. Gryszczyńska (ed.). Croatian Information Technology Society – GIS Forum, Zagreb, 144 pp.
- <sup>17</sup> Cieślak I., Dobińska M., Jankowska M., Kiedrowicz M., Kowalczyk A., Kulawiak M., Szuniewicz K., Szypuła B., Zwirowicz-Rutkowska A. (2015). *Enhancing a City via GIS: Issues and Challenges*. M. Kulawiak (ed.). Croatian Information Technology Society – GIS Forum, Zagreb, 77 pp.
- <sup>18</sup> Czaplicki K., Gajos-Gržetić M., Gołuchowski J., Korzeb M., Kurek J., Pańkowska M., Russo A., Tomić V., Zbarachewicz B. (2015). *Smart City*.

M. Gajos-Gržetić (ed.). Croatian Information Technology Society – GIS Forum, Zagreb, 94 pp.

<sup>19</sup> *Geographic Information Systems Conference and Exhibition "GIS ODYSSEY 2016", 5th to 9th of September 2016, Perugia, Italy, Conference proceedings.* A. Bieda, J. Bydłosz, A. Kowalczyk (ed.). Croatian Information Technology Society – GIS Forum, Zagreb, 298 pp.

<sup>20</sup> *Geographic Information Systems Conference and Exhibition "GIS ODYSSEY 2017", 4th to 8th of September 2017, Trento – Vattaro, Italy, Conference proceedings.* T. Adamczyk, E. Dębińska (ed.). Croatian Information Technology Society – GIS Forum, Zagreb, 440 pp.

<sup>21</sup> *Geographic Information Systems Conference and Exhibition "GIS ODYSSEY 2018", 10th to 14th of September 2018, Perugia, Italy. Conference proceedings.* P. Ćwiąkała, A. Kwartnik-Pruc, E. Puniach (ed.). Croatian Information Technology Society – GIS Forum, Zagreb, 496 pp.

Table 2. Number of papers in topics range of GIS conferences 2014-2018

Topics	Number of papers
Geodesy – Cadastre – Cartography	71
Geoinformatics Systems. Information Technology	13
Space and Law. Legally Protected Regions. Geoinformation and Law. Informatics, Law & Communication	24
Cultural and Natural Heritage Management	3
Globalization and Social-Economic Problems. Transition and Challenge in the New Europe. Economics and Regional Development	4
The State and Local Level Administration & Management (Municipal Projects)	5
Ecology	2
Sea and Water Management	1
Environmental and Earth Resources Management. Structure and Function of the Geographical Environment	10
Spatial Information Systems in Practice. The New GIS Solutions	11
Agriculture and Forestry	12
The Integrated Europe and World. Infrastructure for Spatial Information in Europe. International Cooperation	4
Total	160



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### **Geodesy – Cadastre – Cartography**

880. Adamczyk T. (2017). *Application of Huber and Hampel M-estimation in Analysing of Real Estate Price Volatility Over Time*. In: *Geographic Information Systems Conference and Exhibition “GIS ODYSSEY 2017”, 4th to 8th of September 2017, Trento – Vattaro, Italy, Conference proceedings*. T. Adamczyk, E. Dębińska (ed.). Croatian Information Technology Society – GIS Forum, Zagreb, 7-12.
881. Antognelli S., Vizzari M. (2016). *Landscape Liveability: a Spatial-MCDA Model for Assessment and Mapping*. In: *Geographic Information Systems Conference and Exhibition “GIS ODYSSEY 2016”, 5th to 9th of September 2016, Perugia, Italy, Conference proceedings*. A. Bieda, J. Bydłosz, A. Kowalczyk (ed.). Croatian Information Technology Society – GIS Forum, Zagreb, 5-13.
882. Bajerowski T. (2018). *Geoinformation Analysis and Market Value of Safe Spatial – Safe Place*. In: *Geographic Information Systems Conference and Exhibition “GIS ODYSSEY 2018”, 10th to 14th of September 2018, Perugia, Italy, Conference proceedings*. P. Cwiąkała, A. Kwartnik-Pruc, E. Puniach (ed.). Croatian Information Technology Society – GIS Forum, Zagreb, 14-19.
883. Balawejder M., Matkowska K., Colak E. (2018). *The Impact of Surveying Works on the Development of Smart City* In: *Geographic Information Systems Conference and Exhibition “GIS ODYSSEY 2018”, 10th to 14th of September 2018, Perugia, Italy, Conference proceedings*. P. Cwiąkała, A. Kwartnik-Pruc, E. Puniach (ed.). Croatian Information Technology Society – GIS Forum, Zagreb, 20-32.
884. Balawejder M., Wójciak E. (2017). *Application of GIS Tools in Analysing a Road Network Providing Access to Cadastral Parcels in The Project Concerning Land Consolidation and Exchange*. In: *Geographic Information Systems Conference and Exhibition “GIS ODYSSEY 2017”, 4th to 8th of September 2017, Trento – Vattaro, Italy, Conference proceedings*.

- T. Adamczyk, E. Dębińska (ed.). Croatian Information Technology Society – GIS Forum, Zagreb, 13-21.
885. Banaś M., Nistor S. (2018). *Robust Estimation for Detection of Flatness Defects*. In: *Geographic Information Systems Conference and Exhibition “GIS ODYSSEY 2018”, 10th to 14th of September 2018, Perugia, Italy, Conference proceedings*. P. Ćwiakała, A. Kwartnik-Pruc, E. Puniach (ed.). Croatian Information Technology Society –GIS Forum, Zagreb, 33-39.
886. Bednarczyk M. (2017). *Application Possibilities of Augmented Reality in Analog Maps*. In: *Geographic Information Systems Conference and Exhibition “GIS ODYSSEY 2017”, 4th to 8th of September 2017, Trento – Vattaro, Italy, Conference proceedings*. T. Adamczyk, E. Dębińska (ed.). Croatian Information Technology Society – GIS Forum, Zagreb, 22-27.
887. Bednarczyk M., Biryło M., Dawidowicz K., Hlotov V., Kowalczyk K., Kwartnik-Pruc A., Pelc-Mieczkowska R., Siejka Z., Tomaszewski D., Wróbel A. (2015). *Modern Geodetic Techniques in Spatial Measurement*. K Dawidowicz (ed.). Croatian Information Technology Society – GIS Forum, Zagreb, 102 pp.
888. Benduch P., Pęska A. (2016). *Comparison of the Methods of Capturing Data Concerning Parcel Boundaries in Aspectsoftheir Accuracy and Reliability*. In: *Geographic Information Systems Conference and Exhibition “GIS ODYSSEY 2016”, 5th to 9th of September 2016, Perugia, Italy, Conference proceedings*. A. Bieda, J. Bydłosz, A. Kowalczyk (ed.). Croatian Information Technology Society – GIS Forum, Zagreb, 25-34.
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- Parzych P., Szuniewicz K., Vučić I. (2014). *GIS & Geodesy*. P. Parzych (ed.). Croatian Information Technology Society – GIS Forum, University of Warmia and Mazury in Olsztyn, University of Silesia, Zagreb, 78 pp.
891. Blistan P., Kovanič L. (2017). *Verification of Usability of Low-Cost UAV Photogrammetry in Comparison with Close-Range Photogrammetry in the Context of Documentation of Earth's Surface*. In: *Geographic Information Systems Conference and Exhibition "GIS ODYSSEY 2017", 4th to 8th of September 2017, Trento – Vattaro, Italy, Conference proceedings*. T. Adamczyk, E. Dębińska (ed.). Croatian Information Technology Society – GIS Forum, Zagreb, 43-51.
892. Budzyński T., Karsznia I. (2017). *Assumptions of the Development of the Thematic Service of the Average Property Transaction Prices*. In: *Geographic Information Systems Conference and Exhibition "GIS ODYSSEY 2017", 4th to 8th of September 2017, Trento – Vattaro, Italy, Conference proceedings*. T. Adamczyk, E. Dębińska (ed.). Croatian Information Technology Society – GIS Forum, Zagreb, 43-59.
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894. Buśko M., Przewięźlikowska A. (2016). *The Problem of Demonstrating Cadastral Changes in Surveying Documentation*. In: *Geographic Information Systems Conference and Exhibition "GIS ODYSSEY 2016", 5th to 9th of September 2016, Perugia, Italy, Conference proceedings*. A. Bieda, J. Bydłosz, A. Kowalczyk (ed.). Croatian Information Technology Society – GIS Forum, Zagreb, 50-62.
895. Cichociński P. (2018). *The Concept of Creating Raster Accessibility Maps for Multi-Storey Buildings*. In: *Geographic Information Systems Conference and Exhibition "GIS ODYSSEY 2018", 10th to 14th of September 2018, Perugia,*

- Italy, Conference proceedings*. P. Ćwiąkała, A. Kwartnik-Pruc, E. Puniach (ed.). Croatian Information Technology Society – GIS Forum, Zagreb, 111-119.
896. Cichociński P., Dębińska E. (2016). *Application of 3D Network Analysis for Development of Evacuation Plans and Procedures for Multi-Storey Building*. In: *Geographic Information Systems Conference and Exhibition “GIS ODYSSEY 2016”, 5th to 9th of September 2016, Perugia, Italy, Conference proceedings*. A. Bieda, J. Bydłosz, A. Kowalczyk (ed.). Croatian Information Technology Society – GIS Forum, Zagreb, 63-69.
897. Cienciała A. (2018). *Selected Issues Concerning Management of Historical Immovable Properties in Poland and Other European Countries*. In: *Geographic Information Systems Conference and Exhibition “GIS ODYSSEY 2018”, 10th to 14th of September 2018, Perugia, Italy, Conference proceedings*. P. Ćwiąkała, A. Kwartnik-Pruc, E. Puniach (ed.). Croatian Information Technology Society – GIS Forum, Zagreb, 120-132.
898. Cienciała A., Florek-Paszkowski R. (2016). *Abandoned Properties in the Processes of Real Estate Management in Poland*. In: *Geographic Information Systems Conference and Exhibition “GIS ODYSSEY 2016”, 5th to 9th of September 2016, Perugia, Italy, Conference proceedings*. A. Bieda, J. Bydłosz, A. Kowalczyk (ed.). Croatian Information Technology Society – GIS Forum, Zagreb, 70-76.
899. Ćwiąkała P., Puniach E., Wdowiak P. (2018). *Optimisation of the UAV-Based Photogrammetric Data Collection Process in Documentation of Linear Objects of Substantial Height Differences*. In: *Geographic Information Systems Conference and Exhibition “GIS ODYSSEY 2018”, 10th to 14th of September 2018, Perugia, Italy, Conference proceedings*. P. Ćwiąkała, A. Kwartnik-Pruc, E. Puniach (ed.). Croatian Information Technology Society – GIS Forum, Zagreb, 146-156.
900. Dawidowicz A., Klimach A., Sajnog N., Lewandowicz E., Kwiecień J., Szopińska K., Łuczyński R., Banaszek A. (2015). *New Challenges for Land*

- Information Systems in the Light of European Standards*. A. Dawidowicz (ed.). Croatian Information Technology Society – GIS Forum, Zagreb, 90 pp.
901. Dawidowicz K. (2017). *Precise Point Positioning Using Different Antenna Phase Center Correction Models – a Comparative Study*. In: *Geographic Information Systems Conference and Exhibition “GIS ODYSSEY 2017”, 4th to 8th of September 2017, Trento – Vattaro, Italy, Conference proceedings*. T. Adamczyk, E. Dębińska (ed.). Croatian Information Technology Society – GIS Forum, Zagreb, 102-116.
902. De Montis A., Ledda A., Serra V., Peddio V. (2017). *Assessing Landscape Fragmentation in Sardinia (Italy): The Barrier Effect*. In: *Geographic Information Systems Conference and Exhibition “GIS ODYSSEY 2017”, 4th to 8th of September 2017, Trento – Vattaro, Italy, Conference proceedings*. T. Adamczyk, E. Dębińska (ed.). Croatian Information Technology Society – GIS Forum, Zagreb, 126-135.
903. De Montis A., Serra V., Ledda A. (2018). *Inter and Intra-Patch Landscape Connectivity: a Comparative Measurement for Italy and the UK*. In: *Geographic Information Systems Conference and Exhibition “GIS ODYSSEY 2018”, 10th to 14th of September 2018, Perugia, Italy, Conference proceedings*. P. Ćwiąkała, A. Kwartnik-Pruc, E. Puniach (ed.). Croatian Information Technology Society – GIS Forum, Zagreb, 164-168.
904. Dejaniak D., Dąbrowski J. (2017). *Application of Arima Models in Real Estate Market Forecasting*. In: *Geographic Information Systems Conference and Exhibition “GIS ODYSSEY 2017”, 4th to 8th of September 2017, Trento – Vattaro, Italy, Conference proceedings*. T. Adamczyk, E. Dębińska (ed.). Croatian Information Technology Society – GIS Forum, Zagreb, 117-125.
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Sabova J.	927
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Salata T.	953
Santaga F.	1023

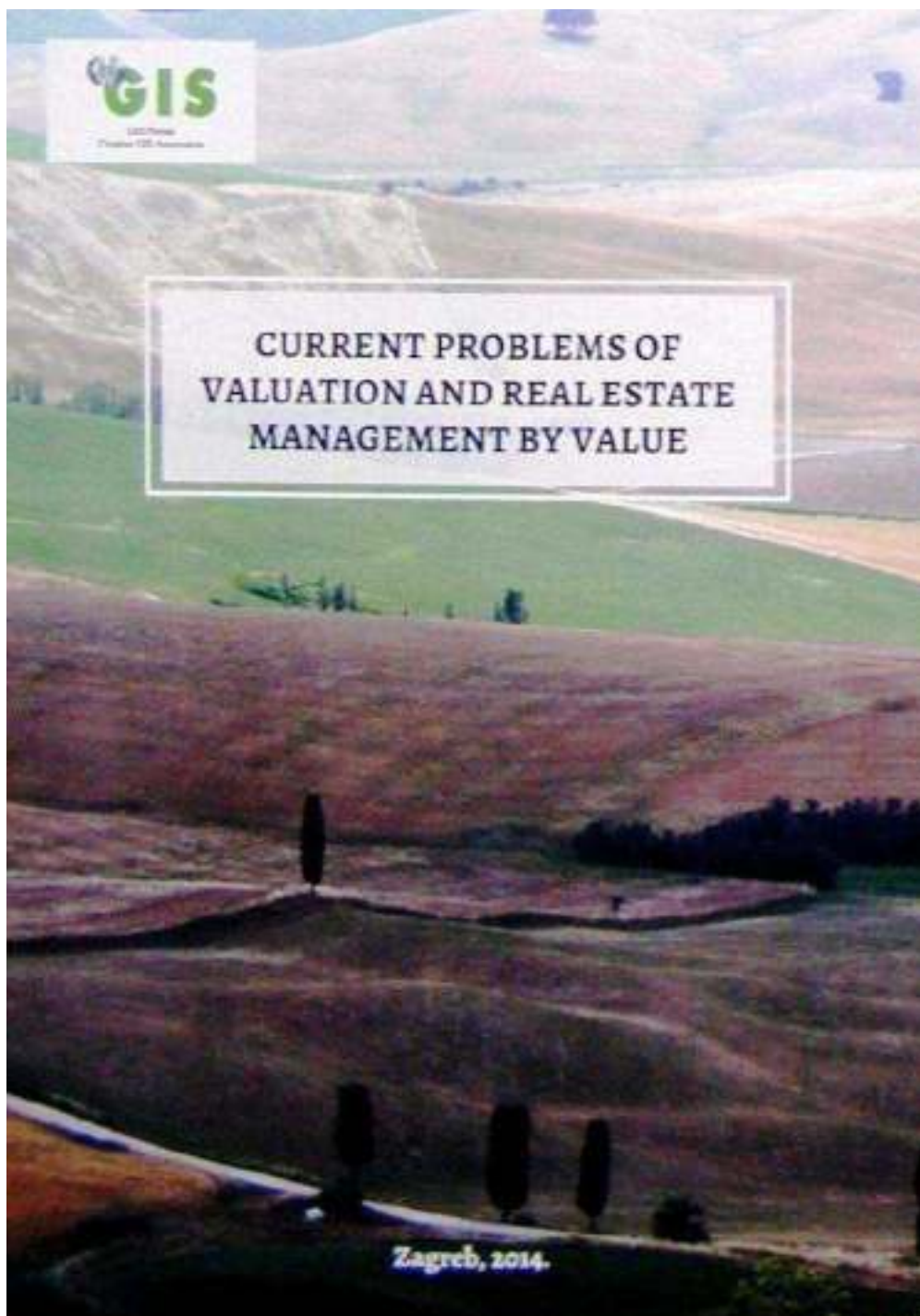
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Schrunk I.	1036
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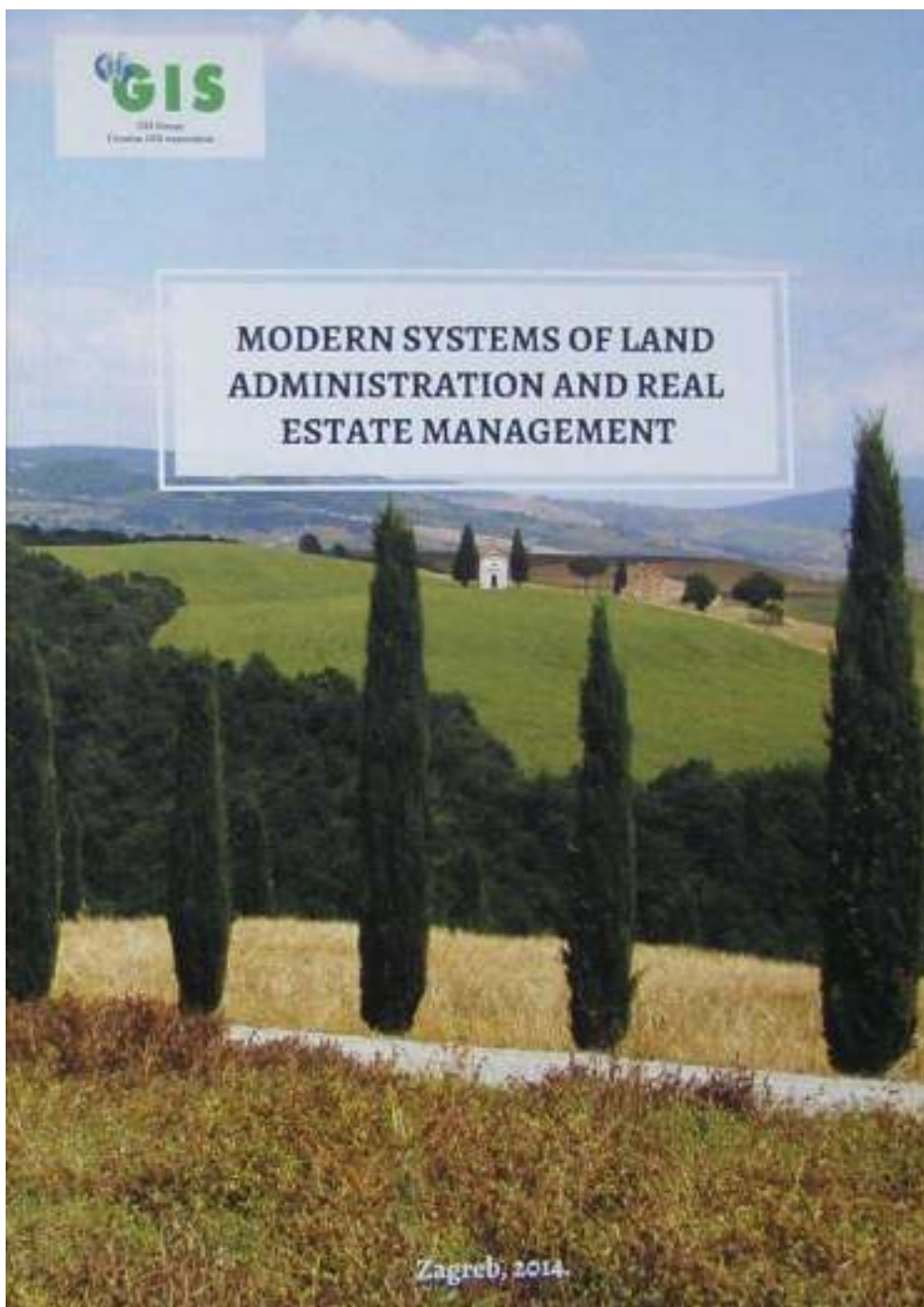
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Tomaszewski D.	887
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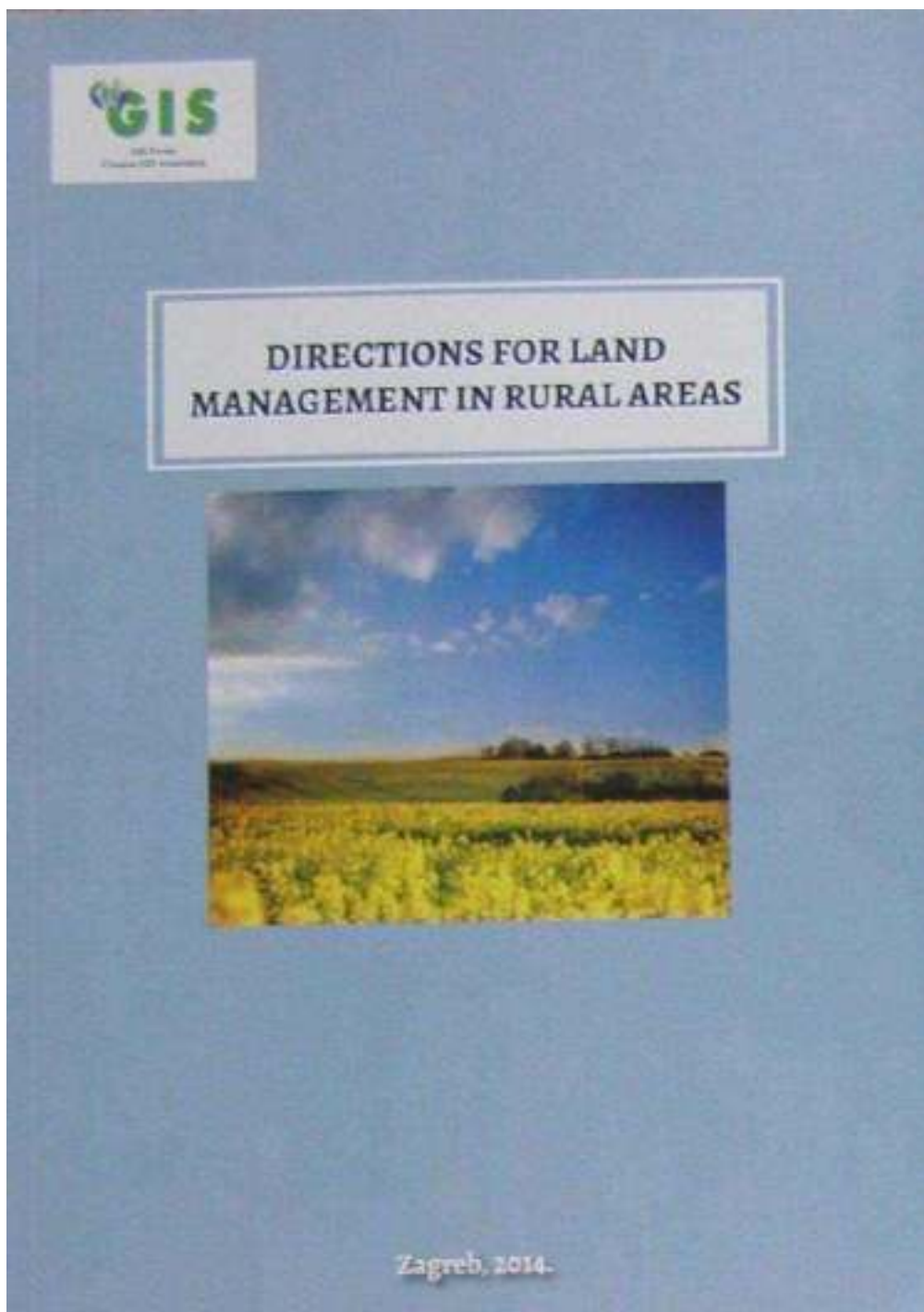
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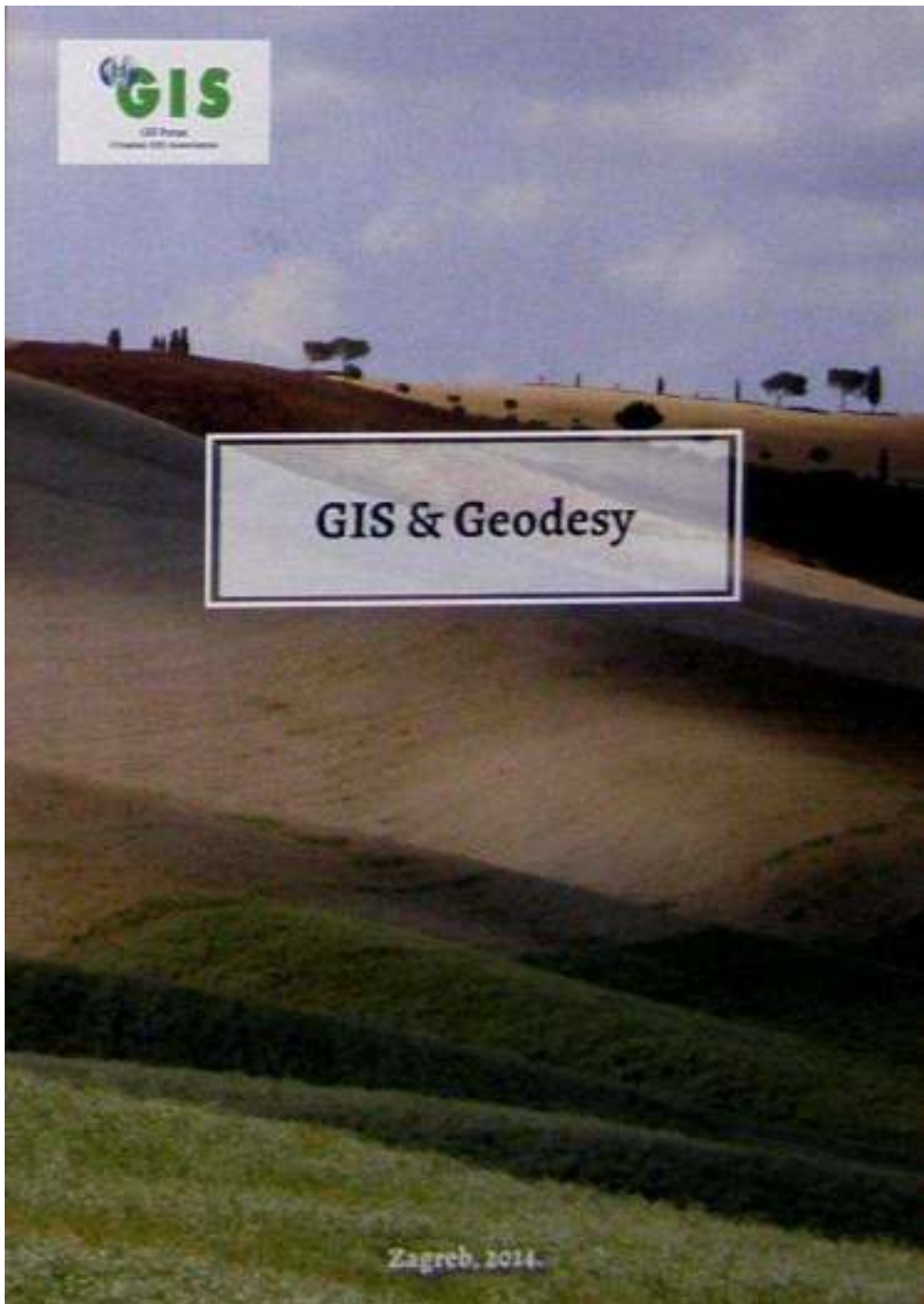


## **Annex 1-21**



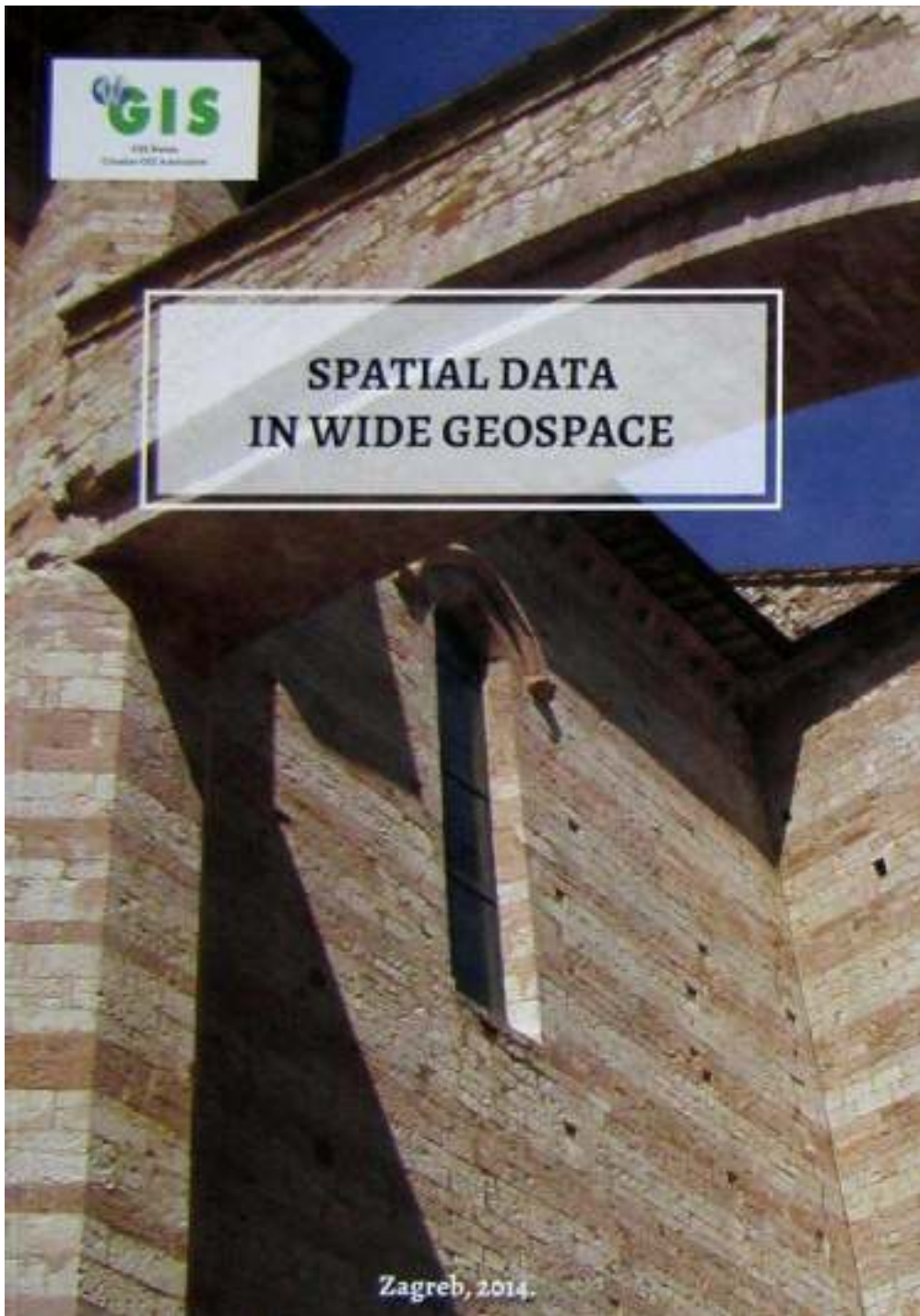


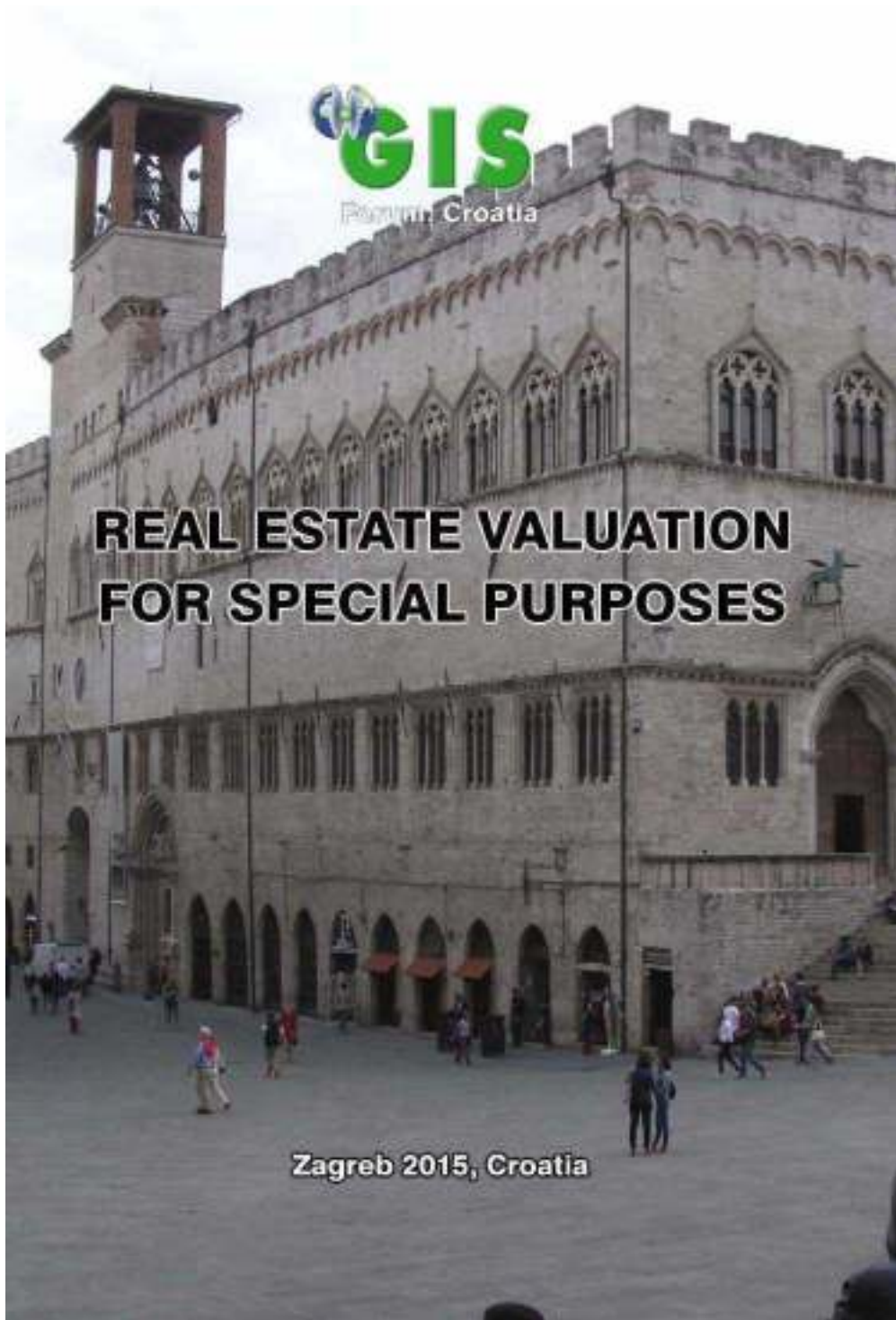




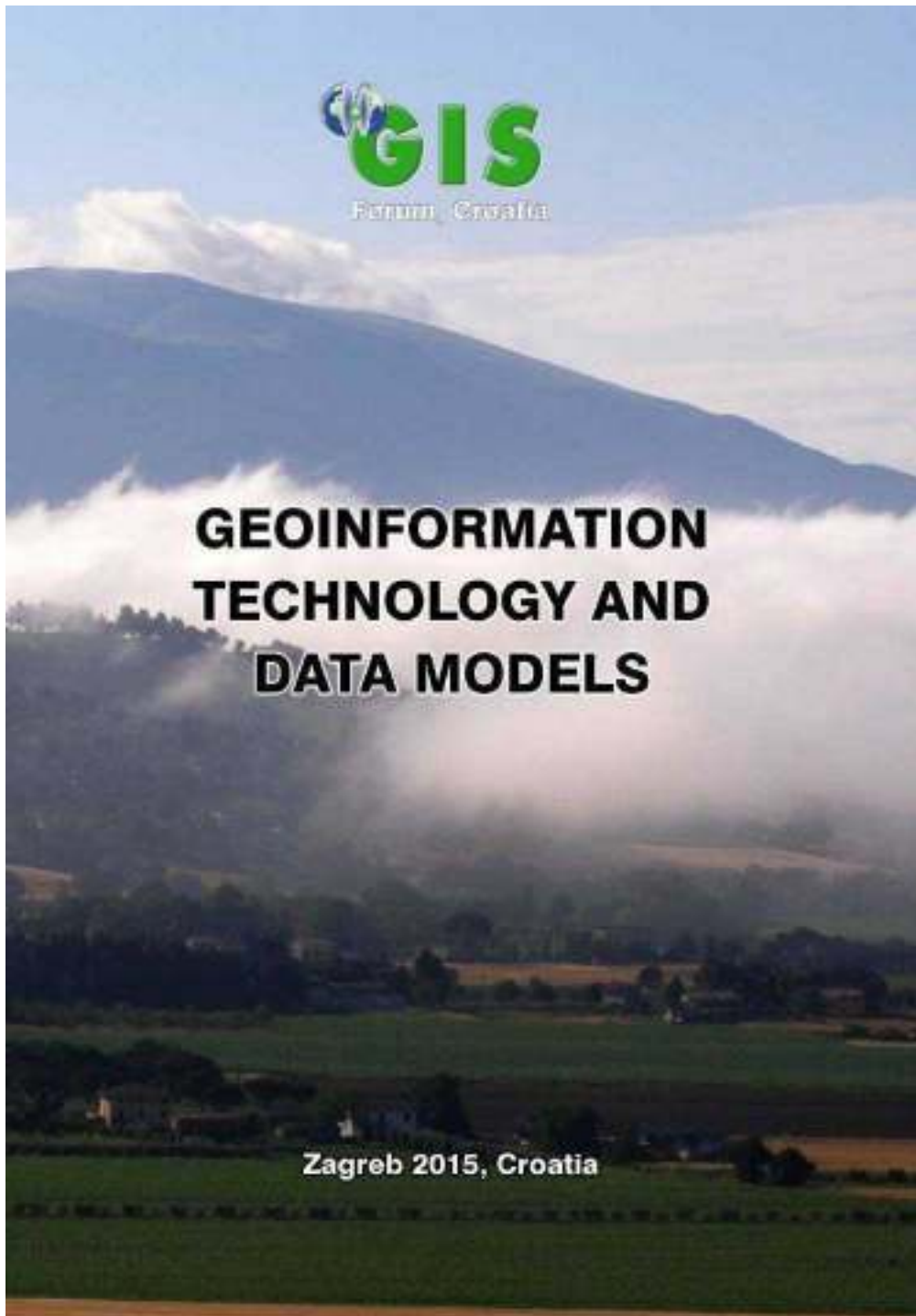


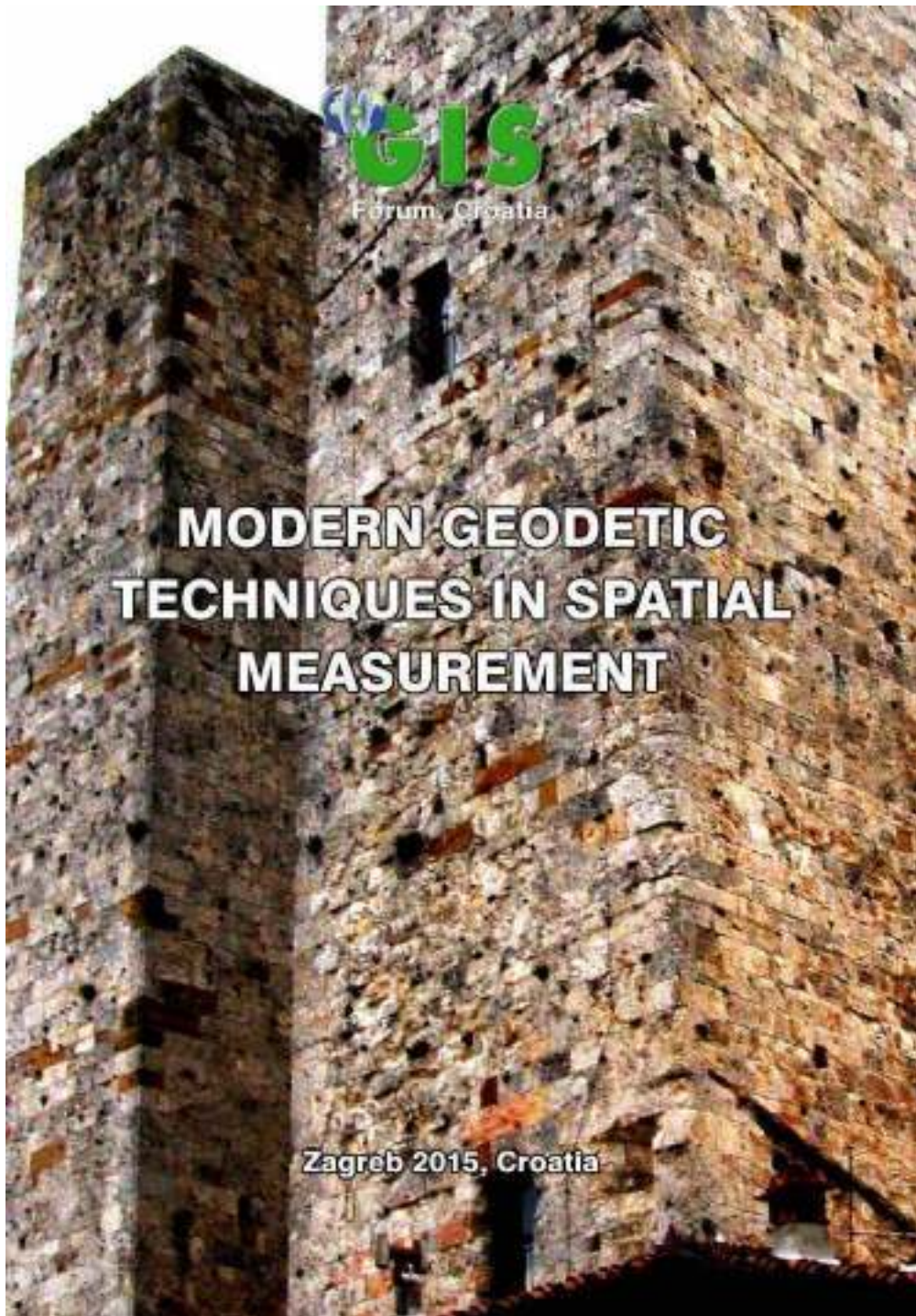








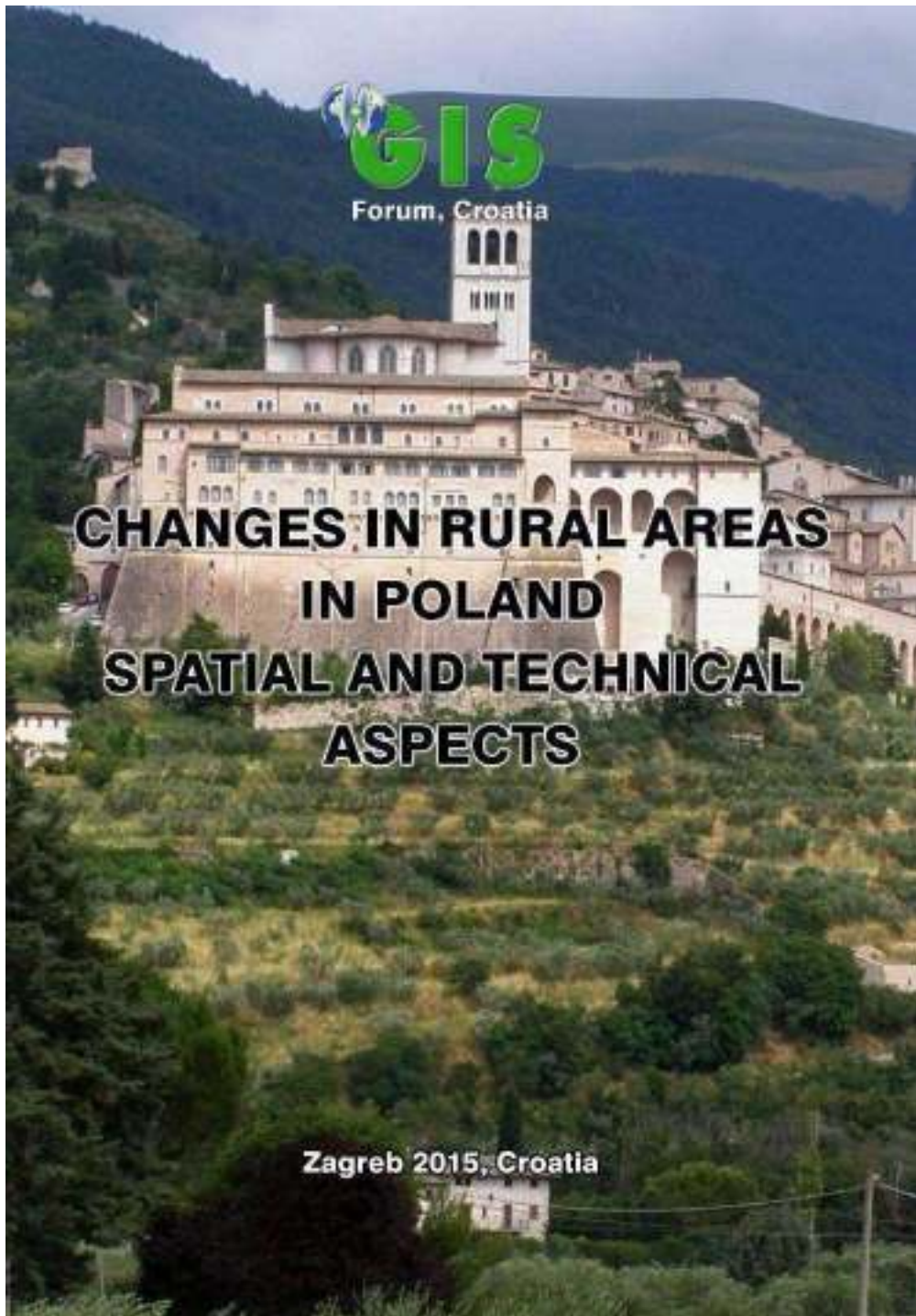




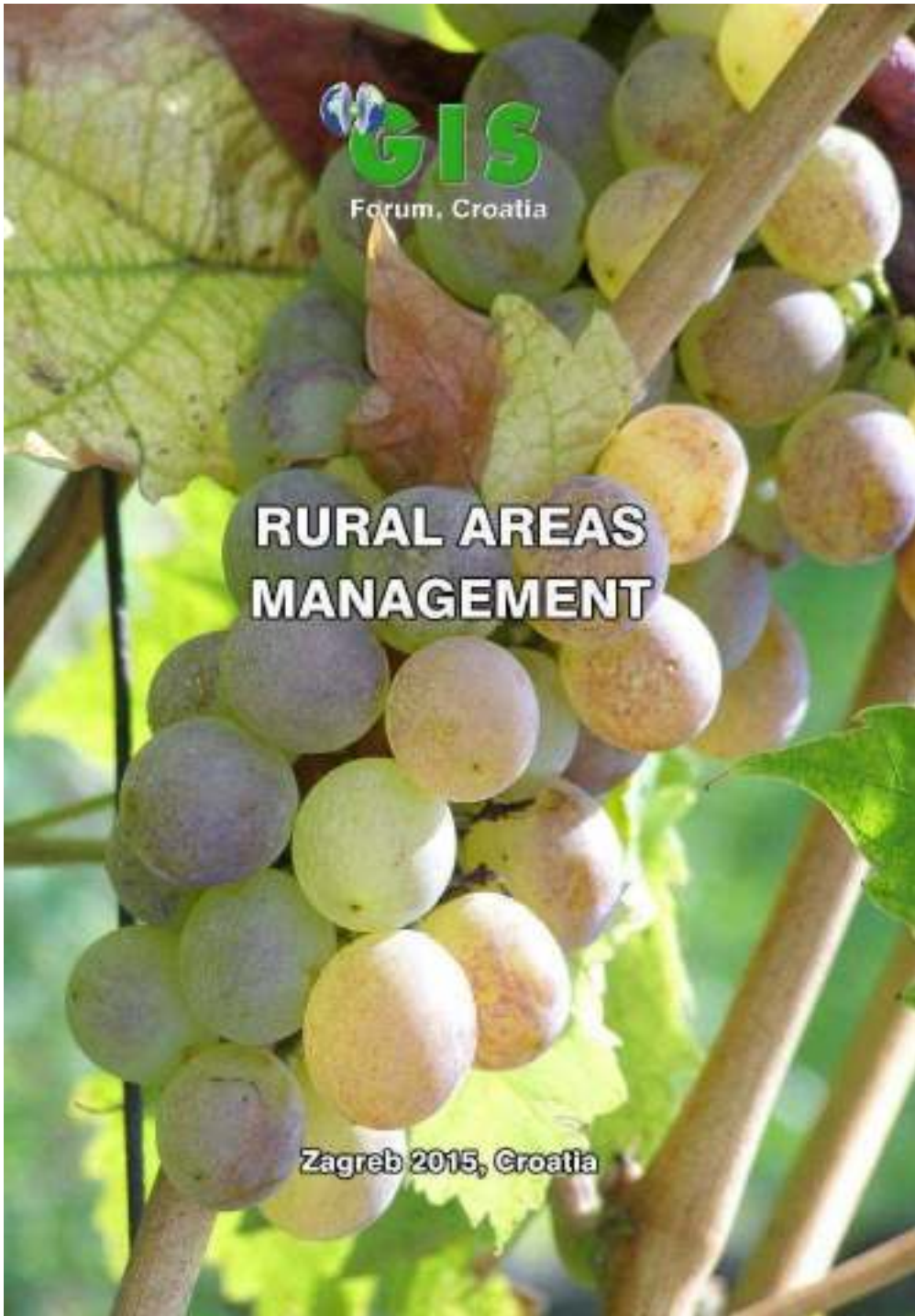


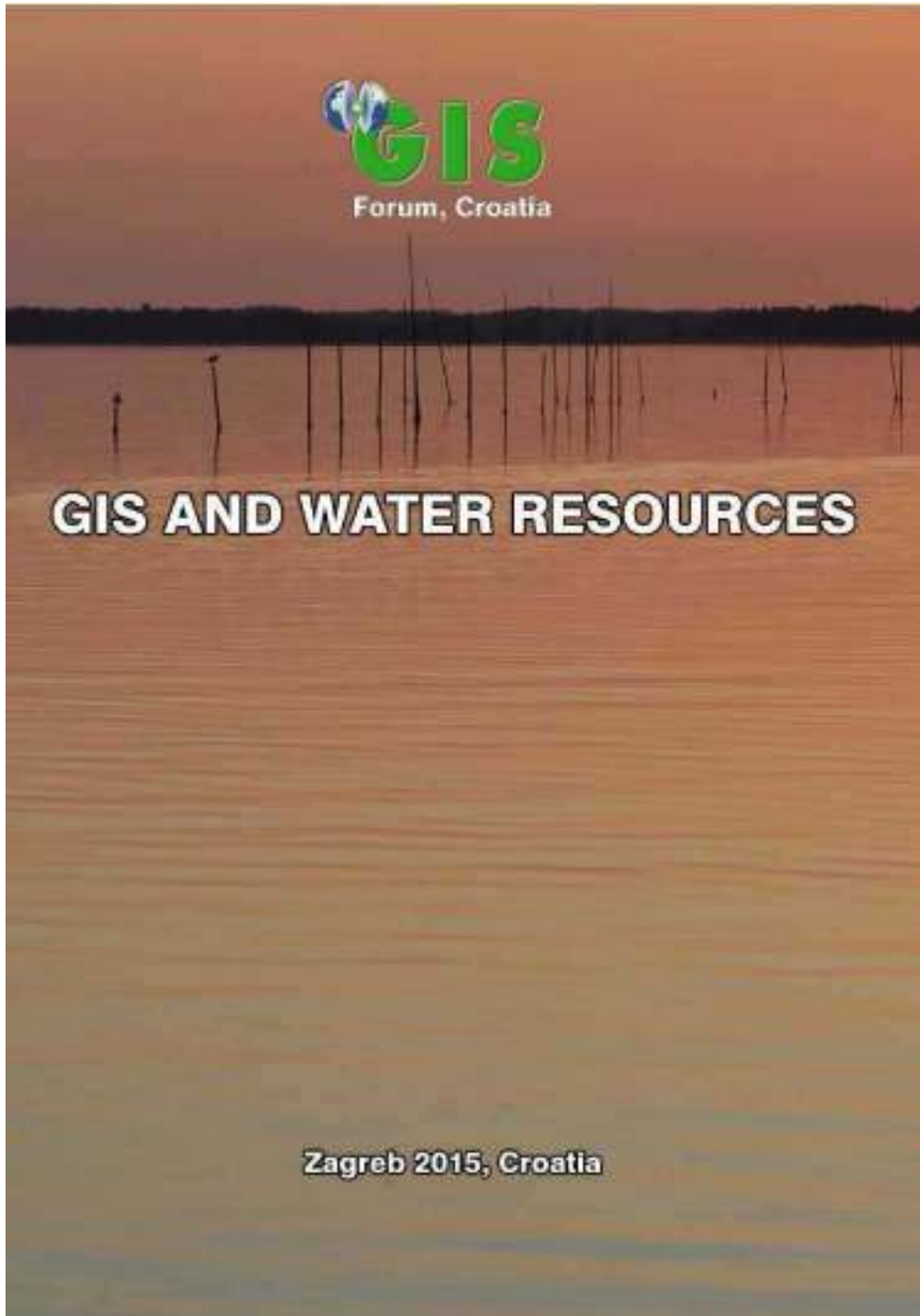


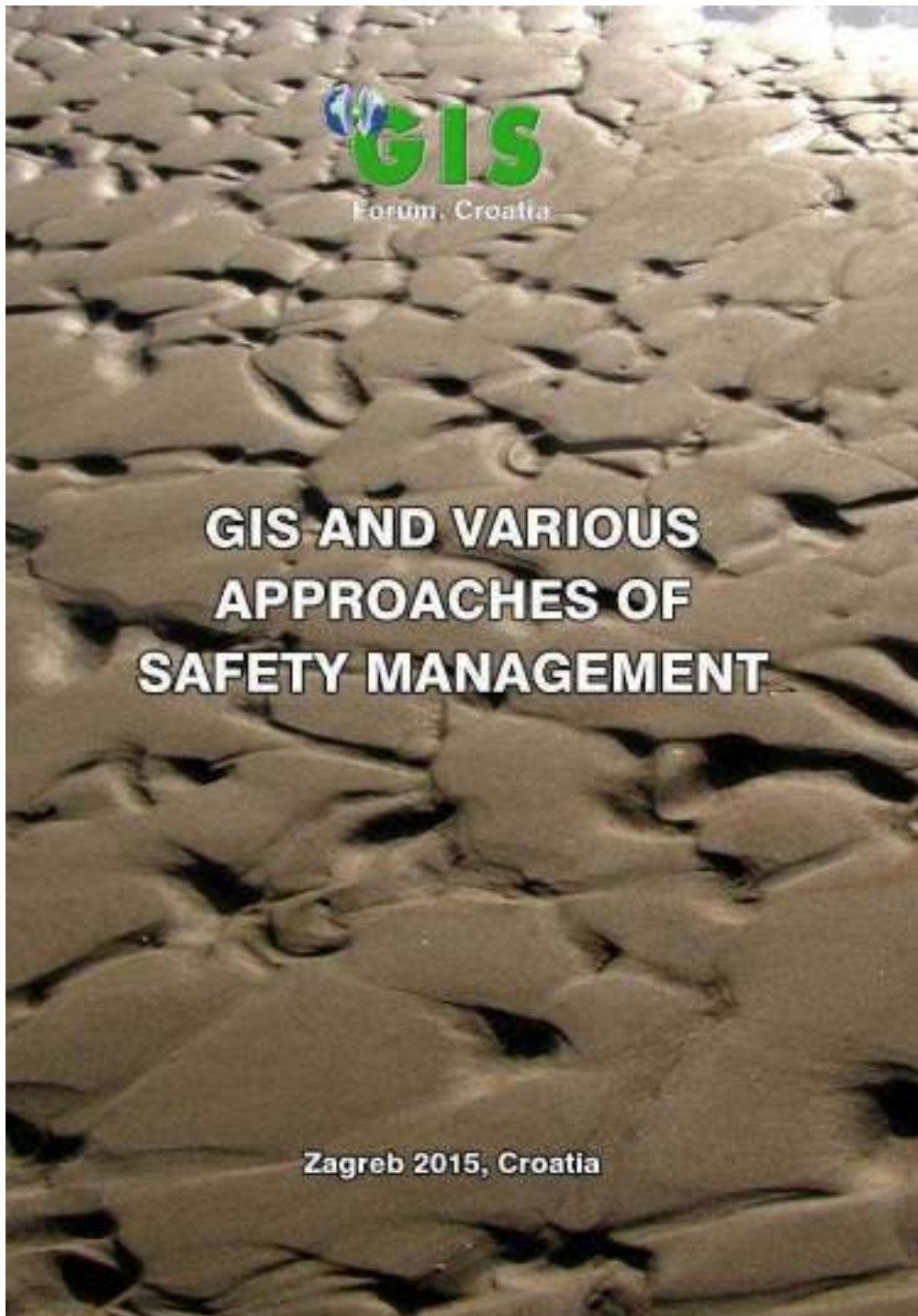




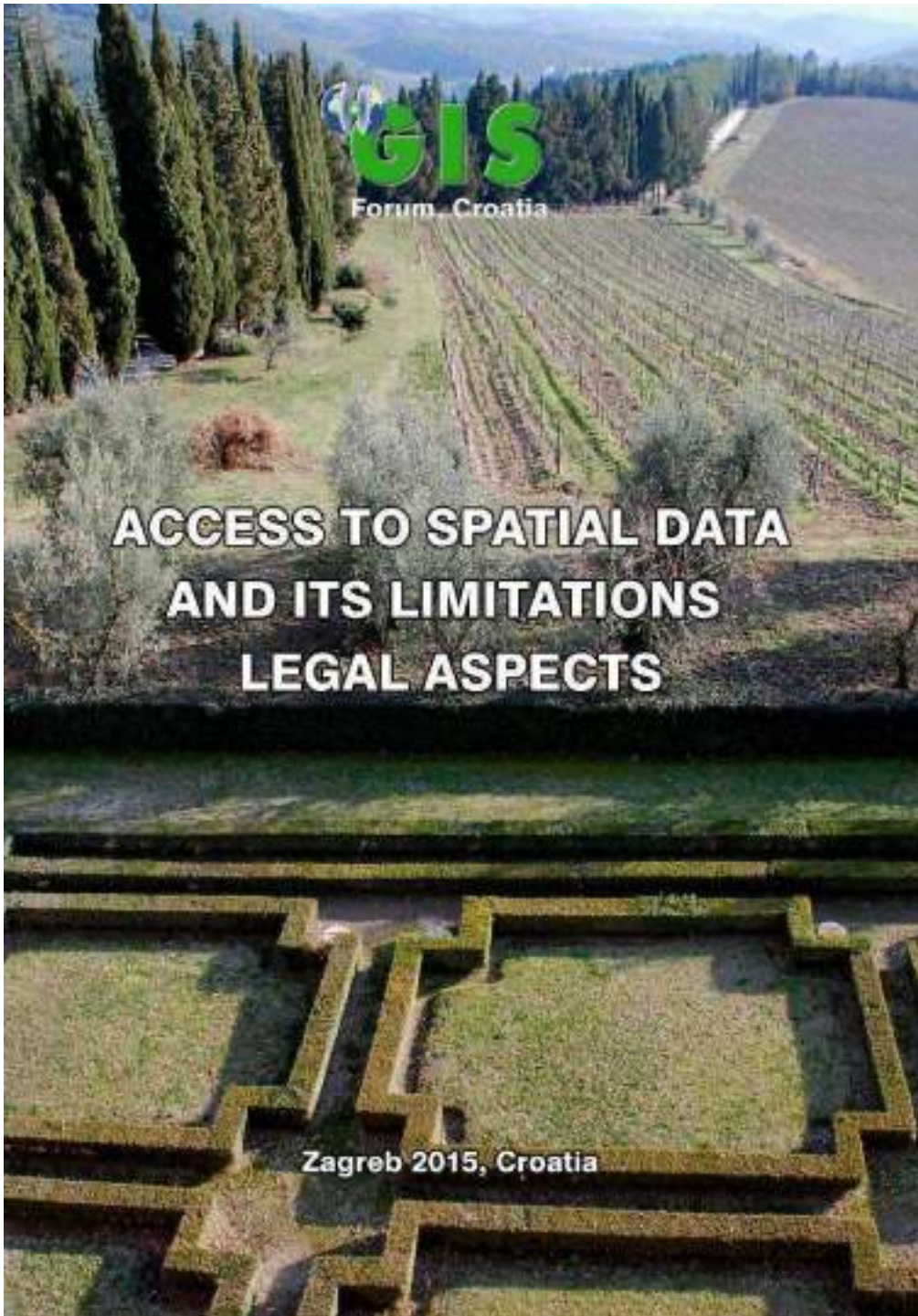


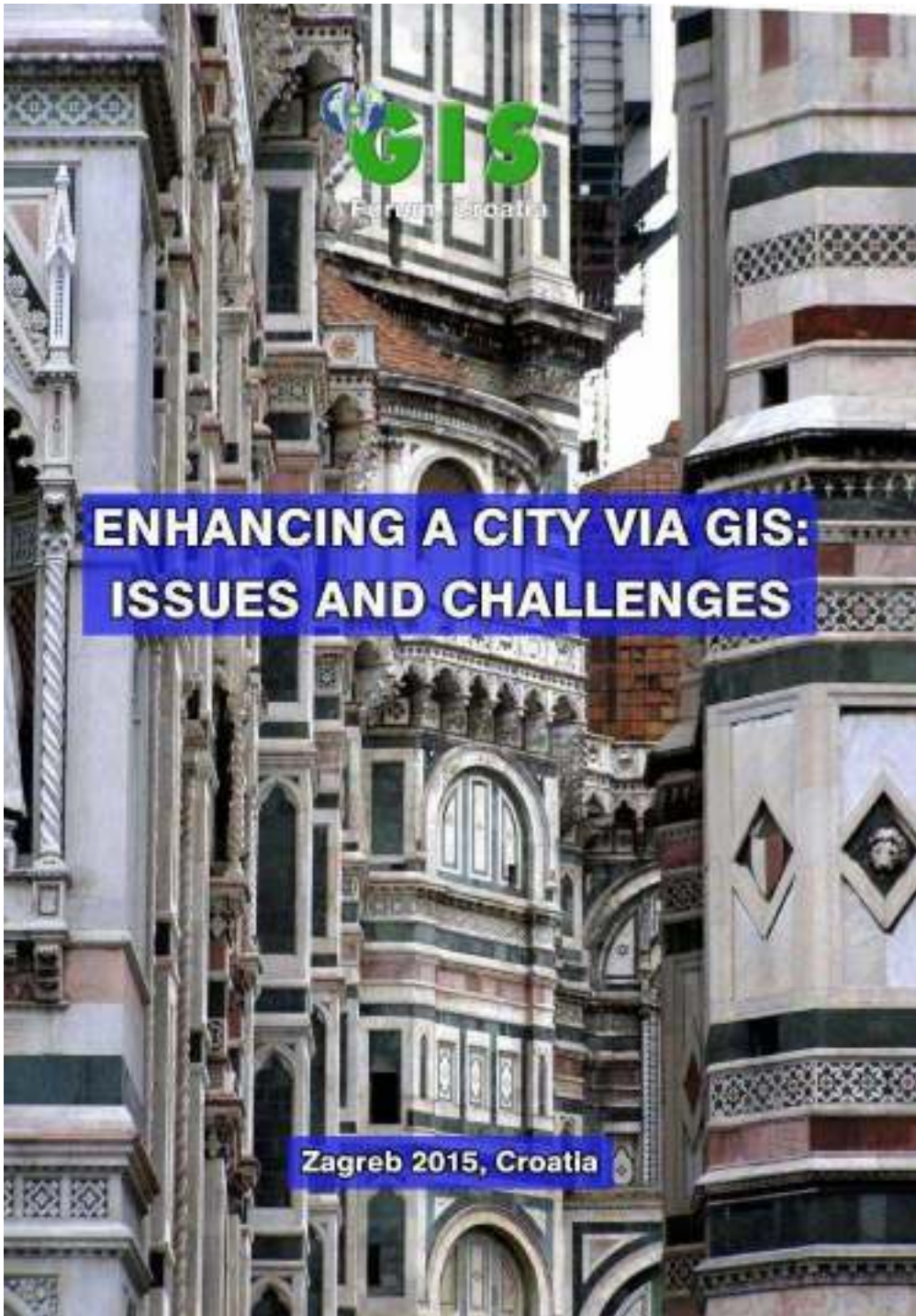




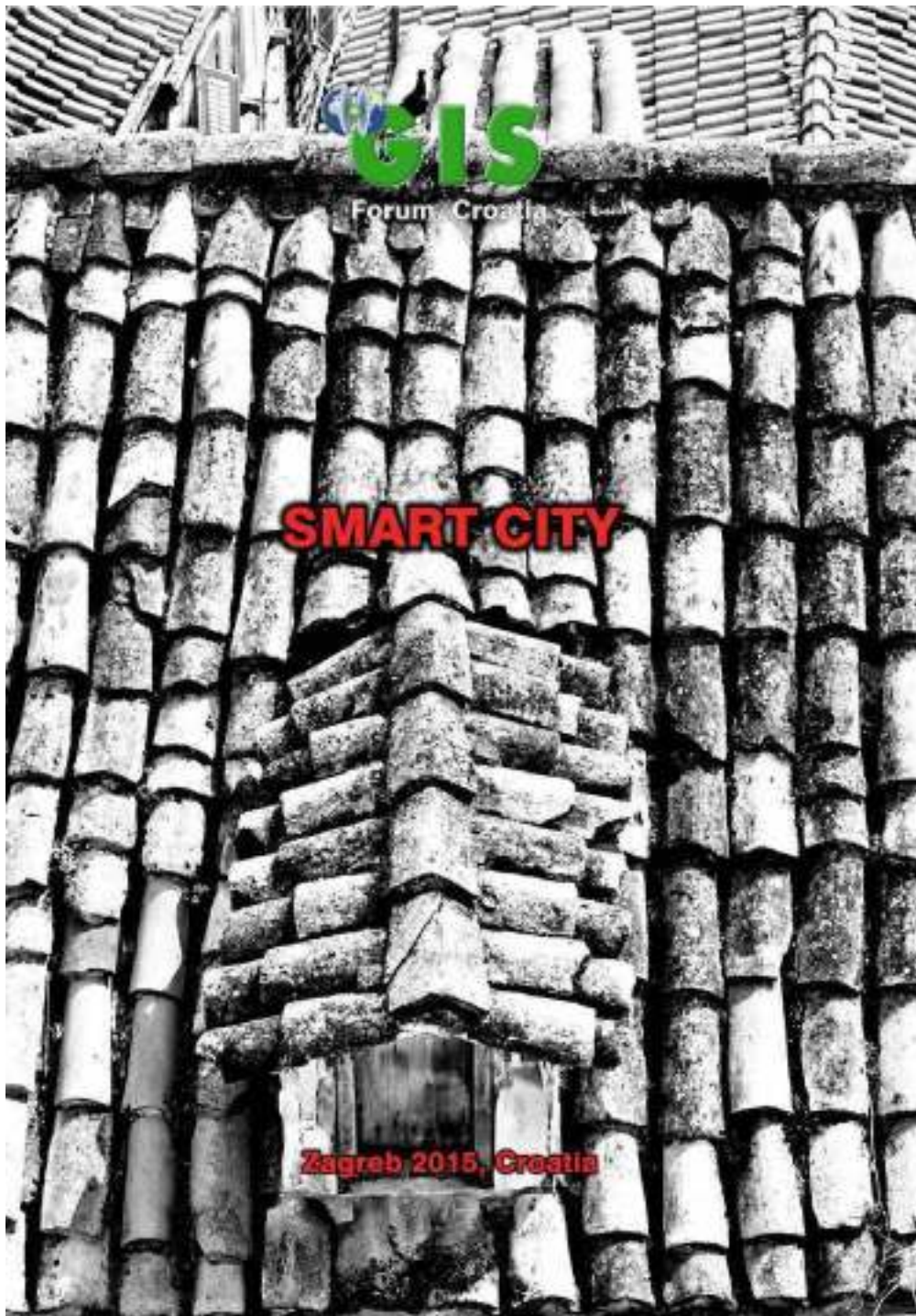


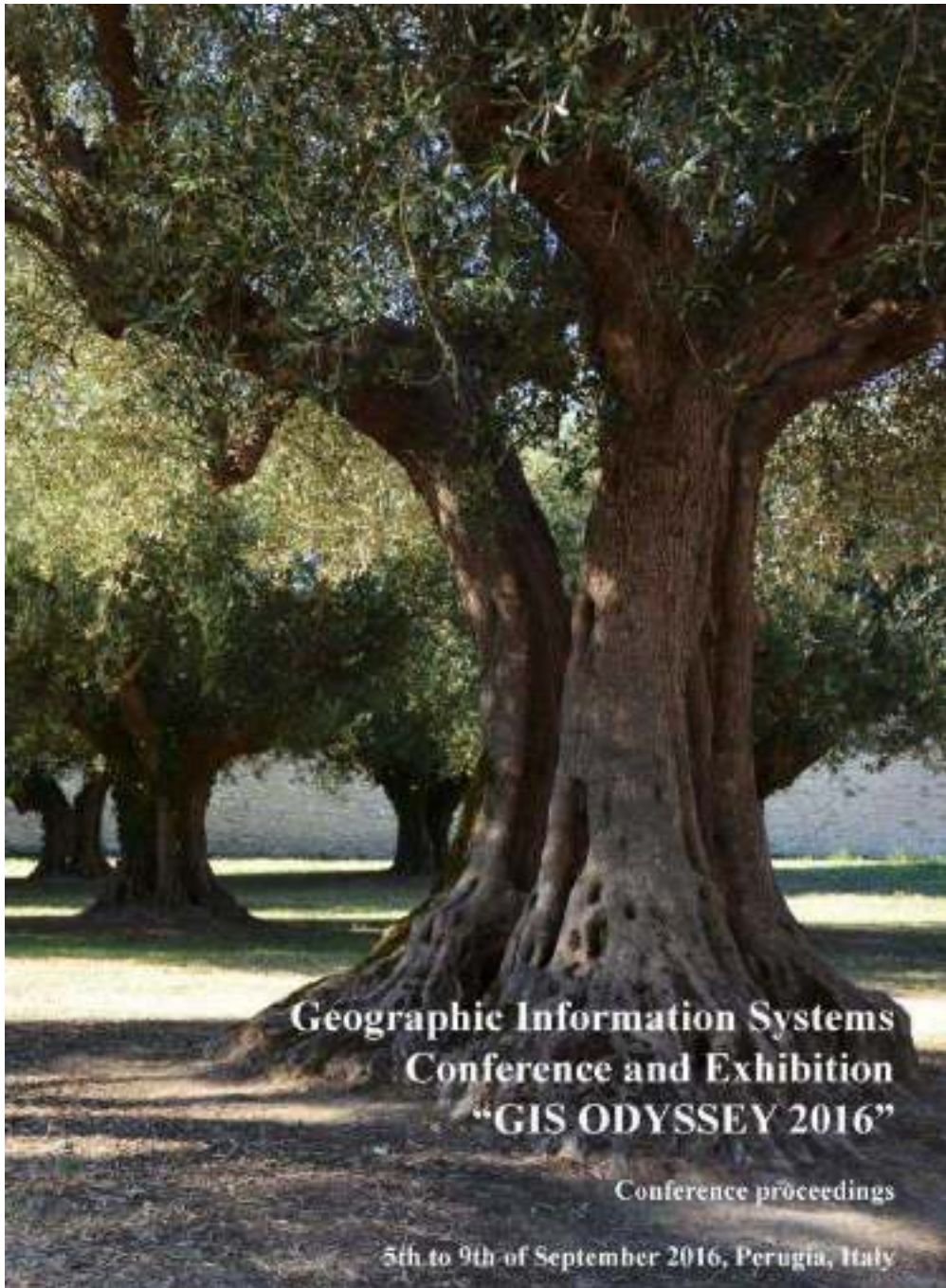




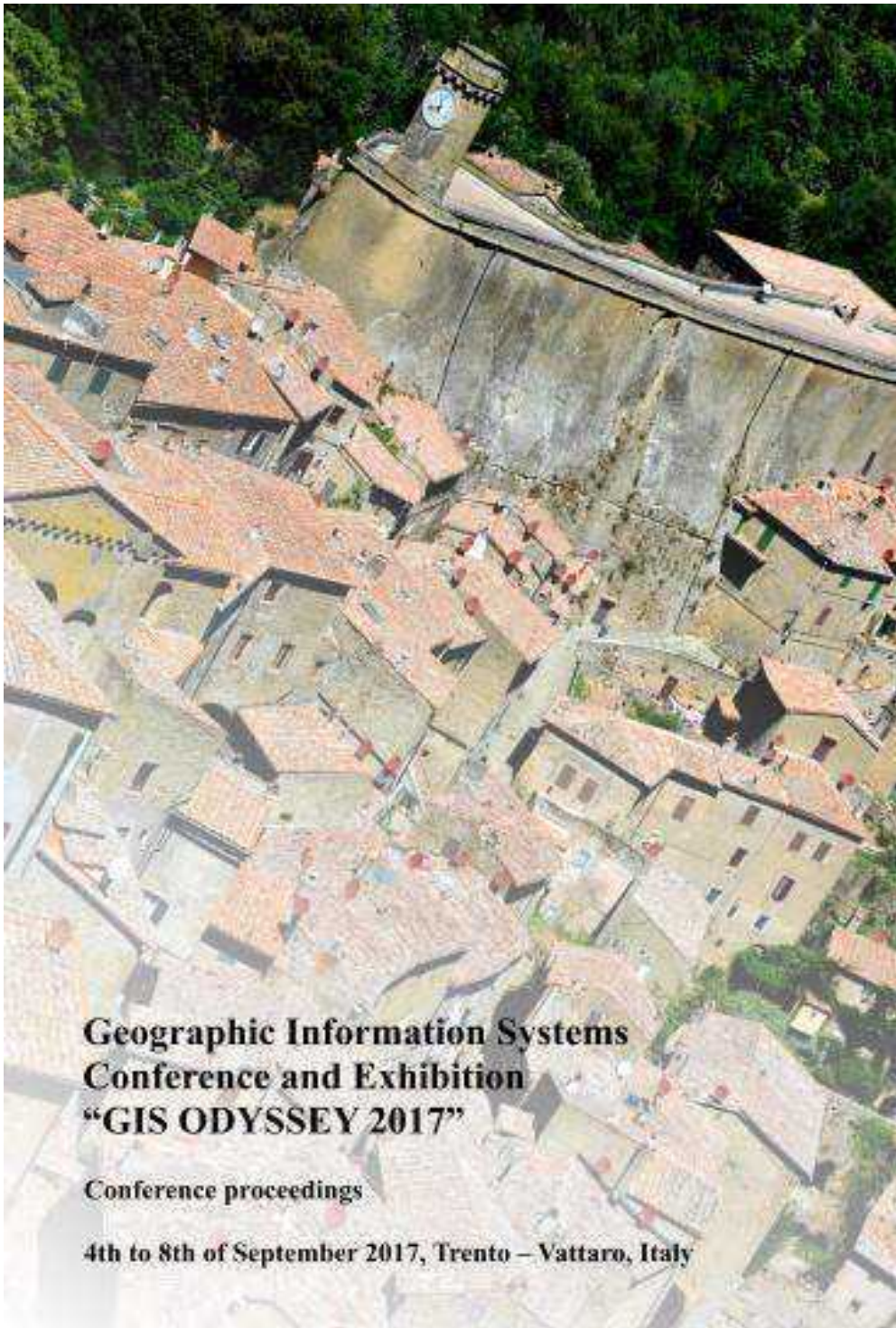








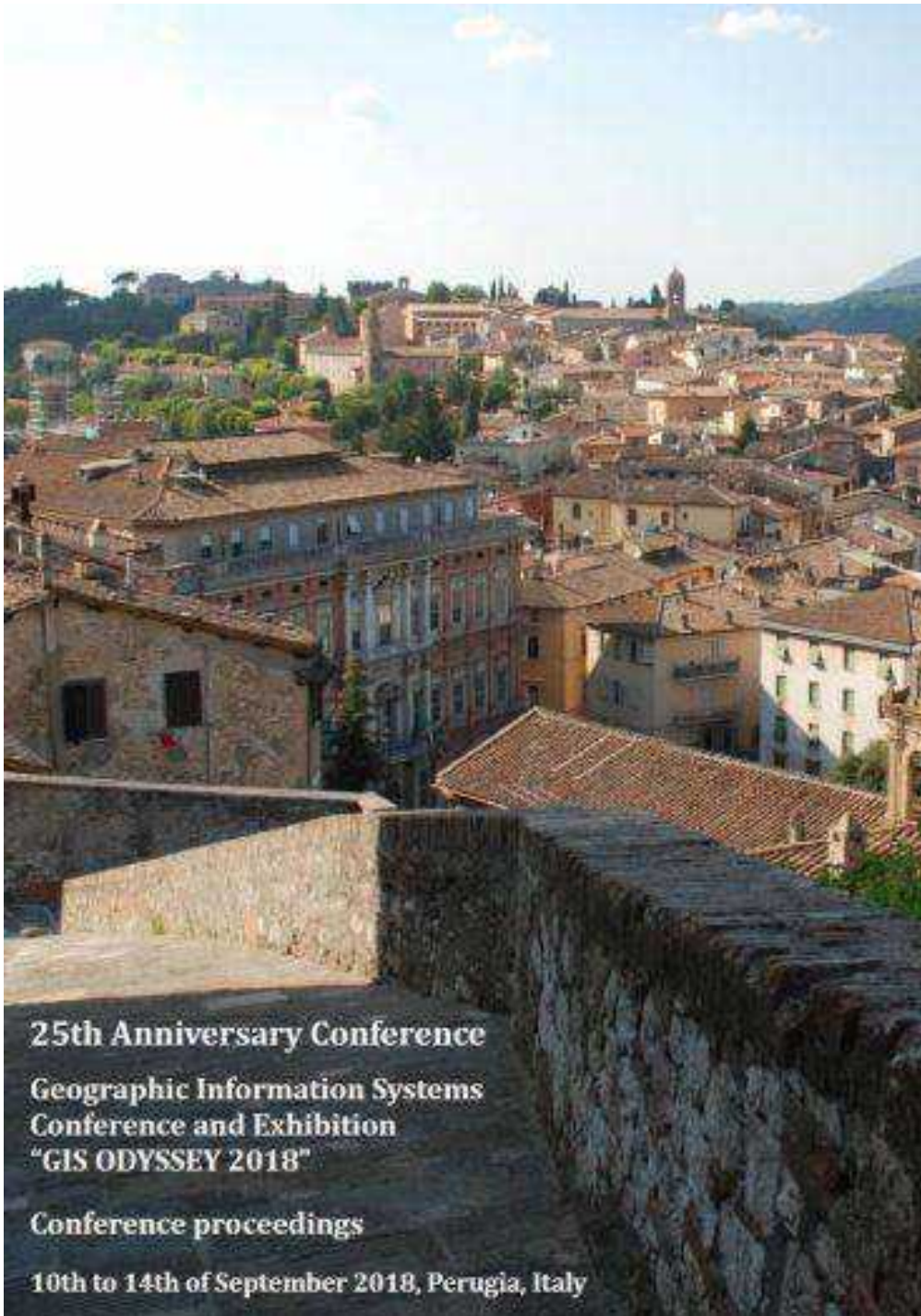




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