

|                         |                                                                        |
|-------------------------|------------------------------------------------------------------------|
| 1. Record Nr.           | UNISALENTO991001212669707536                                           |
| Autore                  | Messenger, Roger A.                                                    |
| Titolo                  | Photovoltaic systems engineering / Roger A. Messenger, Jerry Ventre    |
| Pubbl/distr/stampa      | Boca Raton [etc] : CRC Press, c2004                                    |
| ISBN                    | 0849317932                                                             |
| Edizione                | [2nd ed.]                                                              |
| Descrizione fisica      | 455 p. : ill. ; 25 cm                                                  |
| Altri autori (Persone)  | Ventre, Jerryauthor                                                    |
| Disciplina              | 621.31244                                                              |
| Soggetti                | Photovoltaic power systems<br>Building-integrated photovoltaic systems |
| Lingua di pubblicazione | Inglese                                                                |
| Formato                 | Materiale a stampa                                                     |
| Livello bibliografico   | Monografia                                                             |
| Nota di bibliografia    | Includes bibliographical references and index                          |

|                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2. Record Nr.           | UNINA9910814278003321                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Titolo                  | Solar energy at urban scale // edited by Benoit Beckers                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Pubbl/distr/stampa      | London, : ISTE Ltd.<br>Hoboken, N.J., : John Wiley & Sons, 2012                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| ISBN                    | 1-118-56206-2<br>1-299-31493-7<br>1-118-61392-9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Edizione                | [1st ed.]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Descrizione fisica      | 1 online resource (383 p.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Collana                 | ISTE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Altri autori (Persone)  | BeckersBenoit <1969->                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Disciplina              | 690.028/6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Soggetti                | Solar energy<br>Urban climatology<br>Environmental engineering<br>City planning                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Lingua di pubblicazione | Inglese                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Formato                 | Materiale a stampa                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Livello bibliografico   | Monografia                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Note generali           | Description based upon print version of record.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Nota di bibliografia    | Includes bibliographical references and index.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Nota di contenuto       | Cover; Solar Energy at Urban Scale; Title Page; Copyright Page; Table of Contents; Introduction; The Authors; Chapter 1. The Odyssey of Remote Sensing from Space: Half a Century of Satellites for Earth Observations; 1.1. To improve the weather forecasts; 1.2. Technological challenges to spy and to map from orbit; 1.3. Toward global environmental observers in space; 1.4. The digital revolution of the ICTs for GIS applications; 1.5. Suggested reading; Chapter 2. Territorial and Urban Measurements; 2.1. Solar radiation at the Earth's surface; 2.2. Instrumentation<br>2.2.1. Fundamentals of solar irradiance measurements2.2.2. Solar radiometers; 2.2.2.1. Pyrheliometers; 2.2.2.2. Pyranometers; 2.2.2.3. World radiometric reference; 2.2.2.4. Radiometers calibration and uncertainty; 2.2.2.5. Classification of pyranometers; 2.2.3. Sunshine duration measurements; 2.2.3.1. Burning card method; 2.2.3.2. Pyranometric method; 2.2.4. Data quality assessment; 2.2.5. Data availability; 2.3. Radiation measurements in urban environment; 2.3.1. Description scales; 2.3.2. Urban site description; 2.3.3. WMO recommendations |

2.3.3.1. Scope of measurements and measurement site selection  
2.3.3.2. Measurements and corrections; 2.4. Conclusions; 2.5. Acknowledgments; 2.6. Bibliography; Chapter 3. Sky Luminance Models; 3.1. CIE standard overcast sky (1955); 3.2. CIE standard clear sky (1996); 3.3. CIE standard general sky; 3.4. All-weather model for sky luminance distribution - Perez; 3.5. ASRC-CIE model; 3.6. Igawa all-sky model; 3.7. Absolute luminance; 3.8. Visualization; 3.9. Conclusion; 3.10. Bibliography; Chapter 4. Satellite Images Applied to Surface Solar Radiation Estimation; 4.1. The solar resource  
4.2. Ground measurements of the solar resource  
4.2.1. Ground instruments; 4.2.2. The spatial variability of solar radiation; 4.3. Satellite images for SSI estimation; 4.4. Two different approaches for satellite-based SSI estimation; 4.4.1. SSI clear-sky models; 4.4.2. The inverse approach; 4.4.2.1. The calculation of the cloud coverage index; 4.4.2.2. The calculation of the GHI; 4.4.3. The direct approach; 4.5. Accuracy of satellite-based SSI estimations; 4.6. Use of satellite observations for high-resolution solar radiation estimation  
4.6.1. High-resolution solar atlas of Provence-Alpes-Cote d'Azur  
4.6.1.1. Model for the variation of the optical path length; 4.6.1.2. Model for sky obstruction effects by the orography; 4.6.1.3. Uncertainty analysis of the solar atlas; 4.6.1.4. Dissemination of the solar atlas; 4.6.2. Solar resource assessment at urban scale; 4.7. Bibliography; Chapter 5. Worldwide Aspects of Solar Radiation Impact; 5.1. Global energy budget at the Earth level; 5.2. The distribution of solar radiation on the Earth's surface; 5.2.1. Consequence of the unequal distribution of sunshine  
5.2.2. Effect of the Earth's rotation

---

#### Sommario/riassunto

Increasing urbanization throughout the world, the depletion of fossil fuels and concerns about global warming have transformed the city into a physical problem of prime importance. This book proposes a multi-disciplinary and systematic approach concerning specialities as different as meteorology, geography, architecture and urban engineering systems, all surrounding the essential problem of solar radiation. It collects the points of view of 18 specialists from around the world on the interaction between solar energy and constructions, combining territorial, urban and architectural scales.

---