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June 25–30, San Francisco, California, USA

**The Twenty-seventh (2017) International  
Ocean and Polar  
Engineering Conference**

(Offshore and Polar Engineering Conference)

*Including additional ISOPE symposia:*

**1st Cryogenic Materials**

**2nd Underwater Systems**

**3rd Materials Reliability & Refinery**

**6th Tsunami & Safety**

**6th Asset Integrity**

**8th Arctic Science & Technology**

**7th Arctic Materials**

**8th Renewable Energy & Environment**

**9th Sloshing Dynamics & Design**

**9th Frontier Energy Tech**

**10th Strain-Based Design**

**15th High-Performance Materials**

**ISOPE-2017**

San Francisco, California, June 25-30

(As of January 20, 2017)

**Technical Program**

Refereed papers from 50+ countries in 155 technical general  
5 Plenary and 5 keynote and Focus sessions

Full Program with Paper List, General Information, Reservations,  
Publications and Updates on

<http://www.isopec.org/publications/publications.htm>

ISOPE-2017 Conference proceedings

ISBN 978-1-880653-97-5; ISSN 1098-6189

Forms for Advance Registration and Venue Hotel:

<http://www.isopec.org/conferences/conferences.htm>

*Organized by:*

Technical Program Committee, ISOPE

*Sponsored by:*

International Society of Offshore and Polar Engineers (ISOPE)

With cooperating organizations (listed inside)



ISOPE, P.O. Box 189

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[meetings@isopec.org](mailto:meetings@isopec.org); [www.isopec.org](http://www.isopec.org)



Opening session, Tea Break, Banquet

At **ISOPE-2016 Rhodes**

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## **ISOPE-2017 San Francisco**

The 27th Annual International Ocean and Polar Engineering  
Conference, San Francisco, June 25-30, 2017

***Expanded Session List and Full Program (digital)  
with Paper List: Download in February from***

[www.isopec.org](http://www.isopec.org) or

<http://www.isopec.org/conferences/conferences.htm>

**Full Program (Session and Paper List) and Update:**

<http://www.isopec.org/conferences/conferences.htm>; Questions to  
[meetings@isopec.org](mailto:meetings@isopec.org)

**ISOPE Journal and Conference Proceedings and Order Form:**

<http://www.isopec.org/publications/publications.htm>

## **2018 ISOPE Conference and Symposia**

**28th Annual ISOPE-2018 Conference, Sapporo, Japan, June  
10-15**

**12th ISOPE Ocean Mining and Gas Hydrates Symposium  
(OMS/ OMGH-2018), Sapporo, Japan, June 10-15, 2018**

**13th ISOPE PACOMS-2018 Symposium, Jeju Island, Korea,  
October 14-17; 2018, 2018**

## GENERAL INFORMATION



**PLACE AND DATE: San Francisco, June 25-30, 2017**

All ISOPE-2017 Conference's technical events, tea breaks and registration will take place at:

**Hyatt Regency San Francisco Airport  
Group Reservation (ISOPE 2017)  
1333 Bayshore Highway  
Burlingame, CA 94010, USA**

### **PARKING**

Management of on-site parking services and facilities is under separate exclusive contract with the hotel. Current self-parking rates are \$25.00 per day for overnight guests, \$6.00 for the first hour and \$12.00 for two to six hours and \$25.00 after six hours for drive-in guests and \$30.00 for valet. Rates are subject to change.  
Discount: 50% discount off self parking

### **LANGUAGE**

The language for the conference is English. No translation service will be arranged.

### **AIR TRAVEL**

Nineteen non-US airlines from all around the world serve **San Francisco International Airport (SFO)** with 29 cities having direct non-stop service. SFO is located 28 km to the south of San Francisco and **Hyatt Regency San Francisco Airport** can be easily reached by Hotel shuttle service or a short taxi ride.

**Attention:** In June the flights are typically sold out early. If having difficulty with travel arrangements to SFO, two other airports serving San Francisco Bay area should be considered. These are: **Oakland International and San Jose International Airports**, 24 and 78 km away from downtown San Francisco, respectively.

### **AIRPORT TO HOTEL**

The Hyatt has a complimentary airport shuttle that runs every 10-15 minutes (and every 30 minutes between the hours of 12:00am – 4:00am) from international and domestic terminals

When guests exit the plane or immigration and baggage pickup, they will need to proceed to the departures level (upper level) and walk outside to the center island "Look for the black sign that reads 'COUTESY HOTEL SHUTTLE' ALL hotel shuttles pick up at the same spot. The Hyatt Shuttle is a white shuttle that has the purple Hyatt logo and the red Marriott logo. There are 4 pickup locations: Terminal 1, Terminal 2, Terminal 3 and the International Terminal (in that order as well). Departing from the airport, it will stop off at Marriott first and then continue to Hyatt. Departing from Hyatt, it goes directly to the airport.

We are about 2 miles away south from the airport. If you prefer, a taxi ride would cost about \$10-\$14 one way

### **(a) SAN FRANCISCO CITY TRANSPORTATION**

**It is best to take BART trains to San Francisco.** Guests can use the Courtesy Airport Shuttle and exit the International Station, which is the last

stop on the shuttle before departing the airport. The BART station is located on the departures level. The entrance is just past the art exhibit and there are signs to guide you.

**BART trains are the fastest, most economical and most convenient to visit areas inside and outside of the city.**

#### **How to catch BART to return to Airport?**

**When traveling back on BART, make sure you catch the ‘yellow’ line (see map below).** When you exit the BART station at San Francisco International Airport, follow signs to the **COURTESY HOTEL SHUTTLE** for pick up.

BART is also an ideal form of transportation not only to reach the hotel from the airport but also to visit the surrounding areas around San Francisco Bay. University of California in Berkeley (23 km to the east) can be readily reached by BART. Stanford University in Stanford/Palo Alto (50 km to the south) can be reached by CALTRAN commuter train from 4<sup>th</sup> and King Street.

#### **(b) OAKLAND and SAN JOSE International Airports**

**From Oakland Airport** (24 km to the east of San Francisco) a connecting bus and BART or a Taxi could be taken to reach the hotel. The total cost of public and private transportation should be under US\$25/person (subject to change.)

**From San Jose Airport** (78 km to the south of San Francisco) it is best to take the taxi to the train station and take the commuter train to San Francisco. This route also offers two options. Existing at the last station (**4<sup>th</sup> and King**) a short taxi ride is feasible to reach the hotel. An alternate is to transfer from the train to BART at Millbrae station (just before SFO) and **exiting BART at Montgomery station**. The total cost of public and private transportation should be about US\$30/person (subject to change.)

#### **CURRENCY EXCHANGE**

Cash dispensers (ATMs) that accept all major credit/debit cards can be found at several locations in the airport, hotel lobby and retail areas, throughout the area.

Currency exchange services will charge either a flat fee for small denominations or a percentage of the amount exchanged: usually the exchange rate is more favorable at the banks.

#### **TAX**

All sales transactions are subject to a sales tax of the purchase price included in sales price with no tax rebate.

#### **San Francisco: useful links**

BART quick planner - <http://www.bart.gov/>

Things to do in SF - <http://www.sftravel.com/explore>

Digital visitor guide - <http://www.sftravel.com/article/visitors-guide>

Basic travel tips and deals - <http://www.sftravel.com/plan-your-trip>

**BART trains** are the fastest, most economical and most convenient to visit areas outside of the city.

Detail information of BART from San Francisco Airport terminal is posted on <http://www.isope.org/conferences/conferences.htm>  
For further information, click on <http://www.sfvisitor.org>

**ACCOMMODATION: Find the Hyatt Regency venue hotel reservation form in this program or download from <http://www.isope.org/conferences/conferences.htm>**  
*San Francisco is the world's most popular tour destination.*

*Reservations should be made in February and early March, as the hotels in San Francisco may become fully booked early in 2017.*

Hyatt Regency San Francisco Airport (SFO) Hotel is the official venue for the Conference. Rooms are reserved at the ISOPE group rates for the Conference. You must use the Reservation Form for ISOPE group discount rate for booking.

*ISOPE's discount room rates apply to a limited number of the rooms.*

#### **CITY TRANSPORTATION**

**City Bus.** Within the city it is best to take public transportation. City buses and Light Rail cars run regularly and can be taken to all points of the city. Bus ride will cost US\$1.50 and a transfer ticket provided by the driver will allow transfer to other buses (including a return to the origin) within a 2 hour period.

**Cable cars** can be taken to visit Ghiairelli Square or Fisherman's wharf at a single ride charge of US\$5.00/person (no transfers).

#### **WELCOME TO SAN FRANCISCO**

Much has been said and written about San Francisco but the statement made by author Gene Fowler may be the best: "Every individual should be allowed to love two cities-his/her own and San Francisco."

Besides its friendly citizens, San Francisco is famous in four other areas:

- 1) Natural and Man-Made Beauty – Most prominent being San Francisco Bay, Twin Peaks, Micro Climate, Golden Gate and Bay Bridges.
- 2) Cultural Center – Famous SF Opera, SF Ballet, SF Symphony, and scores of theaters and museums.
- 3) Culinary Center - San Francisco has more than 4000 restaurants and less than 800,000 citizens (6 million in SF Bay Area).
- 4) Technology Center – Two great universities (UC Berkeley and Stanford) and thousands of start-up companies with cutting edge technology are located in San Francisco Bay Area.

**Silicon Valley.** Silicon Valley is "High-Tech Heaven." Throw a dart at a list of high-tech companies, and the one you hit probably has at least an office or a large campus in Silicon Valley. Many high-tech companies got their start in Silicon Valley, and there are many more in the process. It has the world's largest concentration of high-tech companies, but they are all over the San Francisco Bay Area. Silicon Valley is typically defined as the area in about a 40-mile radius around [San Jose](#), roughly 50 miles south of [San Francisco](#).

**TIPPING.** Tipping is necessary in most places as service charge is sometimes not added to the bill. However, the bill should be carefully reviewed as some places automatically add a 15% service charge for groups consisting of more than 4 to 6 people.

#### **ELECTRICITY AND ADAPTER**

Appliances operate on 115/120 volts, 60 Hz. A universal adaptor or 2-prong adaptor to fit the U.S. electric outlet.



#### **WHAT TO SEE IN THE CITY**

There are so many interesting places to go in this wonderful city that a whole week may not be adequate. To allocate time effectively, three different options may be considered:

- a) **Sightseeing:** Golden Gate and SF Bay Bridges, Golden Gate Park, Twin Peaks, Ocean Beach and Cliff House, Coit Tower, Cable Car ride, Classic Street Car ride, San Francisco Civic Center (City Hall, SF Opera, Davies Symphony Hall), China Town and Japan Town.

b).**Cultural:** San Francisco Museum of Modern Art (SFMOMA), Exploratorium, Asian Museum (both within Golden Gate Park), Stage Theaters (several on Geary Street within 8 minute walking distance from hotel) and Beach Blanket Babylon (must see for first timers in SF).  
c) **Culinary:** Large number of restaurants in the vicinity of the hotel such as Faz (on Sutter Street – 3 minute walk), Waterfront and Sinbads (on Embarcadero waterfront – 15 minute walk) and Alioto’s and Scoma’s (Seafood at Fisherman’s Wharf – 30 minute walk).

#### **SIGHT-SEEING TOURS**

Various half-day and all-day sight-seeing tour programs for San Francisco and the Bay Area are available. You may book in advance through various tour agency web sites or on Sunday and Monday at the Tour Desk in the Registration area. Information will be also posted later on [www.isope.org](http://www.isope.org).

Visit **Tour desk** in ISOPE-2017 registration area at the hotel. **Maps of San Francisco and brochures** for places of interest will be available at ISOPE registration desk.

**CityPass.** CityPass is good for 9 days to visit famous San Francisco attractions and you can avoid most ticket lines. Attractions include San Francisco Museum of Modern Art, Blue & Gold Fleet Bay Cruise, Exploratorium, Legion of Honour, California Academy of Sciences, Aquarium of the Bay and Monterey Bay Aquarium. It is also good for 7 days for Muni and Cable car rides. You can buy your CityPass for \$94 online or at corner of Market & Powell, corner of Beach & Hyde, and at any of the listed attractions you visit. For more detailed information visit <http://www.citypass.com/san-francisco/plan-your-visit-san-francisco>

**San Francisco City Tour Bus.** The city municipal bus system offers several tours, including one to the Golden Gate Bridge and another Baker Beach and Environmental Research Center. <http://www.sfmuni.gov>

#### **CONFERENCE TOURS, Friday, June 30 [Tentative]**

\* **Wine Country Tour** (Napa and Sonoma wineries, including wine tasting) – Approx. 9 hours; Depart from Hotel at 9:00 AM – about \$59 per person; lunch not included.

Tour bus departs from Hotel at 9:00 AM. Discover the beautiful wine producing areas, Napa and Sonoma, and enjoy an opportunity to taste wines at selected wineries and learn the ins and outs of wine making. Will take about 9 hours, and lunch is not included in the price of approx. \$59.

\* **Monterey Aquarium ([www.mbayaq.org](http://www.mbayaq.org)) & Carmel Tour** (including Pebble Beach Golf Course & 17-mile-Drive)

Tour bus departs from Hotel at 9:00 AM. and will take approx. 11 hours; Monterey Peninsula is one of the most beautiful places with breathtaking sceneries. It is home to Steinbeck’s Cannery Row, Pebble Beach Golf Course, and the world-famous Monterey Bay Aquarium. You will also visit a charming and quaint Carmel with a wide variety of galleries and unique boutiques and restaurants; about \$88 per person; meals not included.

For these tours, *you may book and pay on Sunday (June 25) and Monday (June 26) at the Tour Desk in the Registration Area.*

#### **ADVANCE CONFERENCE REGISTRATION BY EMAIL OR FAX (use the ISOPE-2017 Registration Form on [www.isope.org](http://www.isope.org) )**

Remember to send via **email or fax** the Advance Registration (*and Invoice*) Form in this Program (It can also be downloaded from [www.isope.org](http://www.isope.org)) by:

**DEADLINE: Presenting Authors: March 24 (unless required earlier.)  
Non-Authors, non-presenting authors and co-authors: May 31.**

Forms received **after May 31** will not be processed and will be returned to the senders for on-site registration with a **surcharge of US\$150**. Registrants will not be separately invoiced.

**REGISTRATION CANCELLATIONS**

Requests in writing for cancellation of registration received by **June 1, 2017** only will be granted a refund minus US\$150 handling fee. No **refund to one “presenting” author** per paper, if the paper is already included in the proceedings. The registered **presenting author will receive a proceedings USB drive**.

**REGISTRATION BADGE**

Conference registration badges are required for admittance to all the conference activities, including the reception and banquet.

**Advance Registration Fees: Deadline for the presenting authors is March 24. US\$150 surcharge applies after this date and for on-site registration fees.**

Category	Advance Registration Fee (US\$)*
	<b>Before <u>May 28</u></b>
	<b>2+days</b>
ISOPE member and member author	<b>690</b>
Author, Co-author, Session Chair, Co-Chair (non-ISOPE member)	770
Member of Coop. organizations	770
Non-member of ISOPE	850
New ISOPE member application (incl. 2017 membership fee and one year journal issues)	800
ISOPE Membership fee -renewal, 2017	130
<b>Student Members &amp; Student Authors</b>	
ISOPE Student Member and member author	490
Non-member Full-time Student with 2017 ID	550
New student member application (incl. 2017 membership fee & 2017 Journal issues)	570
ISOPE Student Membership fee - renewal, 2017	80
Additional Banquet ticket for Spouse: Order by May 31- No tickets sold onsite	130

\* The *Conference registration fee* **includes** the conference reception, a conference banquet, tea breaks, and USB of the **4,900-pp. (est.) 4-volume** conference proceedings.

**ON-SITE CONFERENCE REGISTRATION: Grand Peninsular Foyer**

Participants who miss the advance registration (before **May31**) may register on site at the Conference Registration Desk, but there is US\$150 surcharge. The registration desk will be open during the following hours:

Sunday, June 25	15:00-18:00	Wednesday, June 28	08:00-15:00
Monday, June 26	<b>07:30-16:00</b>	Thursday, June 29	08:00-13:00
Tuesday, June 27	<b>08:00-16:00</b>		

**ISOPE-2017 CONFERENCE PROCEEDINGS**

A 4-volume conference proceedings on USB drive (**ISBN 978-1-880653-97-5; ISSN 1098-6189**) is included in all conference registration fees. For additional or separate orders, download the publications order form from [www.isopec.org](http://www.isopec.org) for post-conference order:

A 4-volume Conference Proceedings on USB (4,900 pp. est.)  
\$330 (ISOPE Member \$280)

**Mail or Fax Order from**

[Orders@isope.org](mailto:Orders@isope.org), or ISOPE, 495 North Whisman Road, Suite 300 Mountain View, CA 94043, USA: Fax **1-650-254-2038**.

Advance payment is required. MasterCard or VISA, AMEX, U.S. bank checks in US Dollars *payable to ISOPE* will be accepted. Shipping and handling charges will be added (Download the Publication Order Information from [www.isopec.org](http://www.isopec.org)).

**CONFERENCE HEADQUARTERS** Conference Room

**CONFERENCE RECEPTION**  
17:00-18:00 Sunday Atrium

**ANNUAL CONFERENCE BANQUET**  
19:00 Wednesday Grand Peninsula

**AUTHOR USB TEST** Individual session rooms  
Power-point or LCD projector and screen are available during 08:00-17:00 (Monday - Thursday).

**CHAIR/CO-CHAIR BRIEFING** Grand Peninsula Foyer  
The **session chairs and co-chairs** will be briefed at 07:30 each morning near the registration desk Grand Promenade and will pick up session jacket for author briefings on the day of presentation.  
**Chairs and co-chairs** will also be emailed brief instructions in advance, including the manner of each session conduct and information on authors and presentation.

**PRESENTING AUTHORS** should go directly to their session room 30 minutes before the session and test the USB presentation file.

**INFORMATION - MESSAGE CENTER.**  
The information and message center is located in the registration area. One may contact ISOPE Conference Registration Desk.

**INTERNATIONAL PARTICIPANTS AND VISA APPLICATION**  
International authors, participants or attendees who need help (except financial) can contact: ISOPE-2017 Secretariat, 495 North Whisman Road, Suite 300, Mountain View, California 94043-2111 USA. Fax: +1-650-254-2038; email: [meetings@isope.org](mailto:meetings@isope.org).

**Entry Visa.** Some authors may be required to apply for an entry visa.  
**Visa application form.** Get it from The United State Consulate Office or download from <http://www.unitedstatesvisas.gov/>. If the Consulate requires you to submit an **official letter of invitation**, first advance-register for the Conference, and contact ISOPE, USA (email: [isope-5@isope.org](mailto:isope-5@isope.org) [isope-5@sbcglobal.net](mailto:isope-5@sbcglobal.net) Fax: +1-650-254-2038). Registration form from: <http://www.isope.org/conferences/conferences.htm>

**QUESTIONS ABOUT THE CONFERENCE ?**  
Please e-mail, call or fax before **June 22** to: ISOPE, USA (email: [meetings@isope.org](mailto:meetings@isope.org); Tel: +1-650-254-1871; Fax: +1-650-254-2038), if you have any questions about the conference. Also, click on <http://www.isope.org>.

**TAX DEDUCTIBILITY**  
Expenses of attending professional meetings such as the registration fee and cost of technical publications may be tax-deductible as ordinary expenses for the U.S. citizens and some countries.

**CLIMATE AND CLOTHES**  
The weather in San Francisco Bay Area in late May is generally mild and the average temperature is 22 to 26°C. However, the wind and the fog affecting only San Francisco (i.e., micro climate) can often cause the temperature to drop to 12/14°C. It is always recommended to carry a sweater or a light jacket. Typically, it never rains from April 1<sup>st</sup> through October 30<sup>th</sup>. However, in recent years some light rain was observed in July and September.



## ISOPE Publication Order Information

(Download from  
<http://www.isope.org/publications/publications.htm>  
for further information.)

**Editors:** Jin S. Chung, Ivar Langen, Michael Triantafyllou. **Topics:** *Offshore engineering, ocean engineering, environment, offshore mechanics, polar (Arctic and Antarctic) engineering, advanced marine technology, materials, ocean energy, offshore wind energy, and related science and technology: US\$170. (Member: complimentary) and US\$100 per set of annual back issues; US\$60 per issue.*

To order, download the publication order form from [www.isope.org](http://www.isope.org) > orders, [www.isope.org](http://www.isope.org) > publications, or e-mail to [orders@isope.org](mailto:orders@isope.org) asking for the order form, and enclose the correct amount of payment or purchase order, and mail to:

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495 North Whisman Road, Suite 300  
Mountain View, California 94043-5711 USA  
Fax 1-650-254-2038: [orders@isope.org](mailto:orders@isope.org).

### AUTHOR INDEX AND SUBJECT INDEX

With the advancement of Find or Search function in PDF file, one can use Find or Search in the PDF file of the conference programs posted on <http://www.isope.org/publications/publications.htm>. For ISOPE CD-ROM or USB drive, Click **Ctrl F** will display **FIND**.

*ISOPE Conference and Symposium proceedings are peer-reviewed, indexed by Scientific and Technical Proceedings (ISTP/ISI), Web of Science, Scopus and EI Compendex and others.*

### *International Journal of Offshore and Polar Engineers*

- Quarterly (March, June, September, December) (ISSN 1053-5381: DOI: <http://dx.doi.org/10.17736/10535381>): *Indexed by SCI-E and Scopus and EI Compendex and others.*  
Abstract on <http://www.isope.org/publications/publications.htm>

**Topics:** *ocean and marine engineering, offshore engineering, environment, hydrodynamics, offshore mechanics, Arctic and Antarctic engineering, structures and materials, energy/ Resources, and emerging topics:*

**Yearly subscription rates:** US\$170. (Member; complimentary) and US\$100 per a set of annual back issues. US\$60 per issue.

### *Journal of Ocean and Wind Energy*

- Quarterly (February, May, August, November) (ISSN 2310-3604): *Indexed by Scopus and EI Compendex, Web of Science and others.*

**Topics:** Offshore wind energy, ocean energy, environment, coupled aero-hydrodynamics, hydrodynamics, CFD, structure-foundation interaction, turbine, control, floating systems, bottom-fixed systems, design, optimization; Yearly subscription rates: US\$160. (Member: complimentary).

1. Abstracts of papers, all peer-reviewed are available free at <http://www.isope.org/publications/publications.htm>.
2. For Individual paper(s) in PDF, order online PDF file at \$20 from <http://www.onepetro.org>.
3. ISOPE members are entitled to complimentary Journal copies.

### Journal manuscript submission for review:

1. E-mail manuscripts for peer review in WORD or PDF file if smaller than 5 MB ([editor@isope.org](mailto:editor@isope.org).)
2. Download the Journal template from [www.isope.org](http://www.isope.org).

*Proceedings of Pacific/Asia Offshore Mechanics Symposium*

**Proceedings of the 1st (1990) Pacific/Asia Offshore Mechanics Symposium (PACOMS '90)**, Seoul, Korea, 24-28 June 1990. For a set of 3 volumes, (ISBN 0-9626104-0-2; LCCN 90-082039); approx. 1260 pp., US\$150 per set.

**Proceedings of Special Offshore Symposium China (SOSC-94) /the 3rd (1994) Pacific/Asia Offshore Mechanics Symposium (PACOMS-94)**, Beijing, China, 16-18 April 1994. A single volume (ISBN 1-880653-15-X); 797 pp., US\$100.

**Proceedings of the 4th (1996) ISOPE Pacific/Asia Offshore Mechanics Symposium (PACOMS-96)**, Pusan, Korea, October 31-November 2, 1996. A single volume (ISBN 978-1-880653-27-2; ISSN 1946-0031); 325 pp., US\$80 (ISOPE Member; \$60).

**Proceedings of the 5th (2002) ISOPE Pacific/Asia Offshore Mechanics Symposium (PACOMS-2002)**, Daejeon, Korea, November 17-20, 2002. A single volume (hard copy and CD-Rom) (ISBN 978-1-880653-59-3; ISSN 1946-0031); 252 pp., US\$120 (ISOPE Member; \$80).

**Proceedings of the 6th (2004) ISOPE Pacific/Asia Offshore Mechanics Symposium (PACOMS-2004)**, Vladivostok, Russia, September 12-16, 2004. A single volume (hard copy and CD-Rom) (ISBN 978-1-880653-63-0; ISSN 1946-004X); 299 pp., US\$100 (ISOPE Member; \$80).

**Proceedings of the 7th (2006) Pacific/Asia Offshore Mechanics Symposium (ISOPE PACOMS-2006)**, Dalian, China, September 17-21, 2006. A single volume (CD-ROM) (ISBN 978-1-880653-67-8; ISSN 1946-004X); 357 pp., US\$100 (ISOPE Member; \$80).

**Proceedings of the 8th (2008) Pacific/Asia Offshore Mechanics Symposium (PACOMS-2008)**, Bangkok, Thailand, November 17-21, 2006. A single volume (CD-ROM) (ISBN 978-1-880653-52-4; ISSN 1946-004X); 334 pp., US\$100 (ISOPE Member; \$80).

**Proceedings of the 9th (2010) Pacific/Asia Offshore Mechanics Symposium (PACOMS-2010)**, Busan, Korea, November 14-17, 2010. A single volume (CD-ROM, ISBN 1-880653-79-1, ISSN 1946-004X); 362 pp., US\$100 (ISOPE Member; \$80).

**Proceedings of the 10th (2012) Pacific/Asia Offshore Mechanics Symposium (PACOMS-2014)**, Vladivostok, Russia, October 3-5, 2012. A single volume (CD-ROM, ISBN 1-880653-79-1, ISSN 1946-004X); 362 pp., US\$100 (ISOPE Member; \$80).

**Proceedings of the 11th (2014) Pacific/Asia Offshore Mechanics Symposium (PACOMS-2014)**, Shanghai, China, October 12-16, 2014. A single volume (CD-ROM, ISBN 1-880653-90-6, ISSN 1946-004X); 433 pp., US\$100 (ISOPE Member; \$80).

**Proceedings of the 12th (2016) Pacific/Asia Offshore Mechanics Symposium (PACOMS-2016)**, Gold Coast, Australia, October 4-7, 2016. A single volume (CD-ROM, ISBN 1-880653-98-2, ISSN 1946-004X); 604 pp., US\$100 (ISOPE Member; \$80).

*Proceedings of European Offshore Mechanics Symposium*

**Proceedings of the 1st (1990) European Offshore Mechanics Symposium (EUROMS-90)**, Trondheim, Norway, 20-22 August 1990. A single volume: (ISBN 0-9626104-4-5; LCCN 90-084691); approx. 590 pp., US\$80. (Member; US\$60.)

**Proceedings of the 2nd (1999) ISOPE European Offshore Mechanics Symposium (EUROMS-99):** (of Synopsis in Russian and English), Moscow, Russia, 7-9 June 1999. A single volume: (ISBN 1-880653-44-3); approx. 126 pp., US\$50. (Member; US\$40.)

*Proceedings of the ISOPE Ocean Mining Symposium*

**Proceedings of the 1st (1995) ISOPE Ocean Mining Symposium,** Tsukuba, Japan, November 21-22, 1995. A single volume (ISBN 1-880653-21-4, LCCN 95-77708): 238 pp., US\$100 (Member; US\$80.)

**Proceedings of the 2nd (1997) ISOPE Ocean Mining Symposium,** Seoul, Korea, November 24-26, 1997. A single volume (ISBN 1-880653-33-8, LCCN 97-74490): 201 pp., US\$100 (Member; US\$80.)

**Proceedings of the 3rd (1999) ISOPE Ocean Mining Symposium,** Goa, India, November 8-10, 1999. A single volume (ISBN 978-1-880653-45-6; ISSN 1946-0074): 298 pp., US\$100 (Member; US\$80.)

**Proceedings of the 4th (2001) ISOPE Ocean Mining Symposium,** Szczecin, Poland, September 23-27, 2002. A single volume (ISBN 978-1-880653-56-2; ISSN 1946-0074): 208 pp., US\$100 (Member; US\$80.)

**Proceedings of the 5th (2003) ISOPE Ocean Mining Symposium,** Tsukuba, Japan, September 15-19, 2003. A single volume (hard copy and CD-Rom) (ISBN 978-1-880653-61-6; ISSN 1946-0074): 256 pp., US\$120 (Member; US\$80.)

**Proceedings of the 6th (2005) ISOPE Ocean Mining Symposium,** Changsha, Hunan, China, October 9-13, 2005. A single volume (CD-Rom) (ISBN 978-1-880653-65-4; ISSN 1946-0066): 276 pp., US\$100 (Member; US\$80.)

**Proceedings of the 7th (2007) ISOPE Ocean Mining Symposium,** Lisbon, Portugal, July 1-6, 2007. A single volume (CD-Rom) (ISBN 978-1-880653-69-2; ISSN 1946-0066): 219 pp., US\$100 (Member; US\$80.)

**Proceedings of the 8th (2009) ISOPE Ocean Mining Symposium (OMS-2009),** Chennai, India, September 20-24, 2009. A single volume (CD-Rom) (ISBN 978-1-880653-75-3; ISSN 1946-0066): 308 pp., US\$100 (Member; US\$80.)

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