Berikut adalah bukti korespondensi yang diambil dari email dan halaman pengiriman artikel ke Jurnal “"Solar Energy":

Ms. Ref. No.: SE-D-11-00074R1
Title: Combination of Hargreaves Method and Linear Regression As a New Method to Estimate Solar Radiation in Perlis, Northern Malaysia
Solar Energy

Dear Mr Muhammad Irwanto,

A final disposition of "Accept" has been registered for the above-mentioned manuscript.

Kind regards,

D. Jones
Administrative Support Agent [23-Mar-11]
Solar Energy

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Re: SE-D-11-00074R1
Title: Combination of Hargreaves Method and Linear Regression As a New Method to Estimate Solar Radiation in Perlis, Northern Malaysia

Dear Mr Irwanto,

Your submission entitled "Combination of Hargreaves Method and Linear Regression As a New Method to Estimate Solar Radiation in Perlis, Northern Malaysia" has been received by Solar Energy.

However, before we can proceed with the review process we ask you to address the following:

1) Highlights file is missing, kindly upload research highlights which include 3 to 5 bullet points (max. 85 characters per bullet point including spaces).

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Thank you for submitting your work to the journal, and if you have any questions, please don't hesitate to contact me.

Yours sincerely,

Solar Energy

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Ms. Ref. No.: SE-D-11-00074
Title: Combination of Hargreaves Method and Linear Regression As a New Method to Estimate Solar Radiation in Perlis, Northern Malaysia
Solar Energy

Dear Mr Muhammad Irwanto,

The reviews of your paper are now complete and the overriding opinion of the reviewers is that the paper is not publishable in its present form. Substantial revisions are required and further review is necessary. The reviewers' comments are attached.

Considerable work is necessary. Other stations with solar and temperature data need to be included in the study. A presentation of one station to test a method may be OK for a conference paper, but the generality of the method must be tested for a publication in Solar Energy.

The uncertainty in the parameters also need to be included in the tables.

A plot showing the difference between the predicted and actual values would also be helpful. This would be useful in comparing the different methods and seeing the improvements made.

Please try to prepare a substantially revised manuscript within the next month (30 days), responsive to the reviewers' comments and criticisms. We will not reject your paper should you take longer than two months to revise, however, we strongly urge you to try to meet that time-frame. Taking longer than two months tends to age the data.

Please be sure to create a master list of revisions/rebuttals, responding to each point raised by the reviewers. If you feel that the reviewers' comment does not warrant a revision, please prepare a reasoned rebuttal to their comment.

Upon receipt of a suitably revised new paper, I will send it off to the reviewers for their further consideration.

To submit a revision, please go to http://ees.elsevier.com/se/ and login as an Author.
Your username is: irwanto
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On your Main Menu page is a folder entitled "Submissions Needing Revision". You will find your submission record there.

Thank you for your interest in Solar Energy.

Yours sincerely,

Frank Vignola
Associate Editor
Solar Energy

Reviewers' comments:

Reviewer #2: You have performed a big job of analysis of solar irradiance data for a specific location in Northern Malaysia. It is interesting that you have been able to establish a credible correlation between the temperature difference parameter x and the global irradiance.

Here are some general remarks:

1) It would be nice with more focus on the physical principles behind the relationships. E.g. why should the temperature difference be related to the global irradiance?

2) Some of your paper consists of repetitive quotation of specific results for certain days of your measurement. A resumé indicating general remarks about your results would be of greater value to the reader.

3) I missed some more description of the measuring equipment in use at Chuping Station. Do you use a Kipp-Zonen or Eppley pyranometer? Were the instruments in good condition with recent traceable calibration? How was the data collected? 10-minute average values or sample measurements every 10th minute?

4) Your work would have greater value if you could demonstrate the value of your proposed method at a wide range of locations in Malaysia and perhaps in other parts of the world.

Here are some specific comments on minor language errors. These are not meant to detract from the evaluation of you excellent work but are provided to remove minor language errors and thus improve your presentation.

Abstract - line 8 - of the linear regression ("the" missing)
Abstract - line 11 - the Hargreaves method (no "e")
Abstract - line 5 from bottom - value of ??? is closer (a symbol is missing in the text) - same problem 3rd line from bottom
These missing items do appear in the Abstract of the main paper on the second page of the PDF.
Page 4 of PDF: Statistics of region are interesting but not essential information. Of more interest is the instrumentation and method of data collection at the Meteorological Station.
Page 5: Is there a physical reason for the square root of temperature difference algorithm for global

irradiance?
Page 6: The linear regression equations are well known mathematical relations which can be found in most textbooks on statistics. Could space (and expense) be saved by not restating these well-known equations?
Figure 5 text: correct spelling to "Linear regression"
Page 10: radiation are ... IN July and ... IN March (not "on")
Page 10: try to improve the English here: "The values of RMSE are low. This indicates that the method performs well."
Section 3.3: There is a repetitive listing of values for specific days. If possible this text should be abbreviated with emphasis on the importance of the results.
Section 3.4 title: ... 26 yearS

In your figures with temperature on the y-axis: consider writing "temperature (degrees C)".

Best of luck to you in your continued research work with solar energy.

The reviewer(s) may also have uploaded detailed comments on your manuscript as an attachment. To access these comments, please go to: http://ees.elsevier.com/se/ . Click on 'Author Login'. Click on 'View Reviewer Attachments' (if present).

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Dear reviewers

Thanks for your suggestion of our paper to improve the paper quality. Some our answers for your question can be seen below.

Reviewer #1:

1. Considerable work is necessary. Other stations with solar and temperature data need to be included in the study. A presentation of one station to test a method may be OK for a conference paper, but the generality of the method must be tested for a publication in Solar Energy.

   Answer :

   Perlis is smallest state in Malaysia Peninsular, before only one weather station that is installed in Chuping, Perlis and its belong to Malaysia government. Since 2007 to this time, caused by technical problem it can not record solar radiation data. According to your suggestion to add the solar radiation data in another area in Perils, we have suggested to our University to install weather station, and a Vantage Weather Station Pro2 has been installed in the last February 2011 in front of Electrical Energy and Industrial Electronic System (EEIES) cluster (EEIES cluster station), in Kangar, Perlis. By using the weather station, the temperature and solar radiation can be recorded every minute. For analyzing daily temperature and solar radiation, the data is observed on 07.00 am to 07.00 pm to obtain the minimum, maximum and difference temperature, and also taken the average daily solar radiation for the month of March to June 2011 (these data have been analyzed and discussed in our paper).

   Exactly, the proposed method can be applied at a wide range of locations in Malaysia and in other parts of the world. In calculation of the proposed method, it needs latitude and difference of temperature (difference between maximum and minimum temperature) that taken from sunrise to sunset. If we want to compare the daily estimated and measured solar radiation data, the daily measured solar radiation data have to take from the average daily solar radiation (same from sunrise to sunset).

2. A plot showing the difference between the predicted and actual values would also be helpful. This would be useful in comparing the different methods and seeing the improvements made.

   Answer:

   A plot showing the difference between the predicted and actual values (solar radiation data) have been plotted (Fig. 6,7,8,9,12,13,14,15,16 in the paper), they are only result of daily or monthly solar radiation. To show the improvements made, it is better to test using statistical analysis (coefficient of residual mass (CRM), root mean squared error (RMSE), Nash-Sutcliffe equation (NSE) and percentage error (e)), and caused difference of the methods value is very small, therefore it is better the values are shown in number (Table 4 and 8). The improvements made follow the statistical analysis as explained below the Table in the paper.

3. Please try to prepare a substantially revised manuscript within the next month (30 days), responsive to the reviewers' comments and criticisms. We will not reject your paper should you take longer than two months to revise, however, we strongly urge you to try to meet that time-frame. Taking longer than two months tends to age the data.

   Answer:

   We are sorry that the preparation of a substantially revised manuscript take longer than two months because we need to take solar radiation data from our weather station that is installed in the last February 2011 and the data can be collect from March to June 2011 (these data have been analyzed and discussed in our paper.

4. Please be sure to create a master list of revisions/rebuttals, responding to each point raised by the reviewers. If you feel that the reviewers' comment does not warrant a revision, please prepare a reasoned rebuttal to their comment.

   Answer:

Reviewers' suggestion have been followed in paper and that the reviewers' comment does not warrant a revision also given reason.

Reviewer #2:

1. It would be nice with more focus on the physical principles behind the relationships. E.g. why should the temperature difference be related to the global irradiance?

   Answer:

   Based on the proposed method formulation:

$$a + bx = 0.18R_a(T_{\max} - T_{\min})^{0.5}$$

   It is right that there is relationship between the temperature difference and the solar radiation. Their relationship is proportional (if the temperature difference is high the solar radiation will increase, and if the temperature difference is low the solar radiation will decrease). This condition can be observed from sunrise to sunset, normally the minimum temperature is reached when the sunrise and the maximum temperature reached day time. When the temperature difference is low, the weather is not hot, maybe cloudy, therefore the solar radiation is low also. When the temperature difference is high the weather is hot, therefore the solar radiation is high.

   For example:

   - According to analysis in paper, on 30 March 2011 (in Fig. 3) the minimum and maximum temperatures are 23.40 ^{0}C and 24.20 ^{0}C, respectively. Therefore the temperature difference is 0.80 ^{0}C, its value is very low because at the time a big flood happen in Perlis, the sky is very dark

and rain fall dawn a long day, therefore the solar radiation is very low around 1.61 MJ/m^2 (as shown in Fig. 7).

- On 8th April 2011 (in Fig. 3) the minimum and maximum temperatures are 24.80 ^{0}C and 33.30 ^{0}C, respectively. Therefore the temperature difference is 8.5 ^{0}C, its value is high, it indicates that the sky is very clear a long day, therefore the solar radiation is high around 25.06 MJ/m^2 (as shown in Fig. 7).

2. I missed some more description of the measuring equipment in use at Chuping Station. Do you use a Kipp-Zonen or Eppley pyranometer? Were the instruments in good condition with recent traceable calibration? How was the data collected? 10-minute average values or sample measurements every 10th minute?

   Answer :

   There are two weather stations that installed in Perlis and used in this paper, description of those weather station are :

   Description of those weather station are :

   a. Meteorological Station Chuping, Perlis uses Vantage Weather Station Pro2, its condition is good, only sensor of solar radiation is not good since 2007 (therefore the solar radiation for the year 2007 to 2008 are estimated). The weather station records hourly data, from the hourly data can be calculated the daily data.

   b. According to reviewer's suggestion to add the solar radiation data in another area in Perils, we have suggested to our University to install weather station, and a Vantage Weather Station Pro2 has been installed in the last February 2011 in front of Electrical Energy and Industrial Electronic System (EEIES) cluster (EEIES cluster station), in Kangar, Perlis. Its condition is very good (new weather station). The weather station records data (temperature and solar radiation) every minute.

3. Your work would have greater value if you could demonstrate the value of your proposed method at a wide range of locations in Malaysia and perhaps in other parts of the world.

Answer:

According your suggestion, we have added solar radiation data from another area in Perlis (EEIES Cluster Station, Kangar Perlis). These data have been analyzed and discussed in our paper.

Exactly, the proposed method can be applied at a wide range of locations in Malaysia and in other parts of the world. In calculation of the proposed method, it needs latitude and difference of temperature (difference between maximum and minimum temperature) that taken from sunrise to sunset. If we want to compare the daily estimated and measured solar radiation data, the daily measured solar radiation data have to take from the average daily solar radiation (same from sunrise to sunset).

5. Here are some specific comments on minor language errors. These are not meant to detract from the evaluation of you excellent work but are provided to remove minor language errors and thus improve your presentation.

Abstract - line 8 - of the linear regression ("the" missing)

Answer : It has been corrected.

Abstract - line 11 - the Hargreaves method (no "e")

Answer : It has been corrected.

Abstract - line 5 from bottom - value of ??? is closer (a symbol is missing in the text) - same problem 3rd line from bottom
These missing items do appear in the Abstract of the main paper on the second page of the PDF.

Answer : It has been corrected.

Page 4 of PDF: Statistics of region are interesting but not essential information. Of more interest is the instrumentation and method of data collection at the Meteorological Station.

Answer : It has been corrected. In paper, it is added as subtitle 2.2 Data collection.

Page 6: The linear regression equations are well known mathematical relations which can be found in most textbooks on statistics. Could space (and expense) be saved by not restating these well-known equations?

Answer : It has been removed from paper.

Figure 5 text: correct spelling to "Linear regression"

Answer : It has been corrected.

Page 10: radiation are ... IN July and ... IN March (not "on")

Answer : It has been corrected.

Page 10: try to improve the English here: "The values of RMSE are low. This indicates that the method performs well."

Answer : It has been corrected.

Section 3.3: There is a repetitive listing of values for specific days. If possible this text should be abbreviated with emphasis on the importance of the results.

Answer : It has been corrected. The tables have been formed to list the values.

In your figures with temperature on the y-axis: consider writing "temperature (degrees C)".

Answer : It has been corrected.

Thanks for giving advise to improve this paper.

Best regard

Muhammad Irwanto

Lecturer of Electrical System Engineering School

Universiti Malaysia Perlis (UniMAP)


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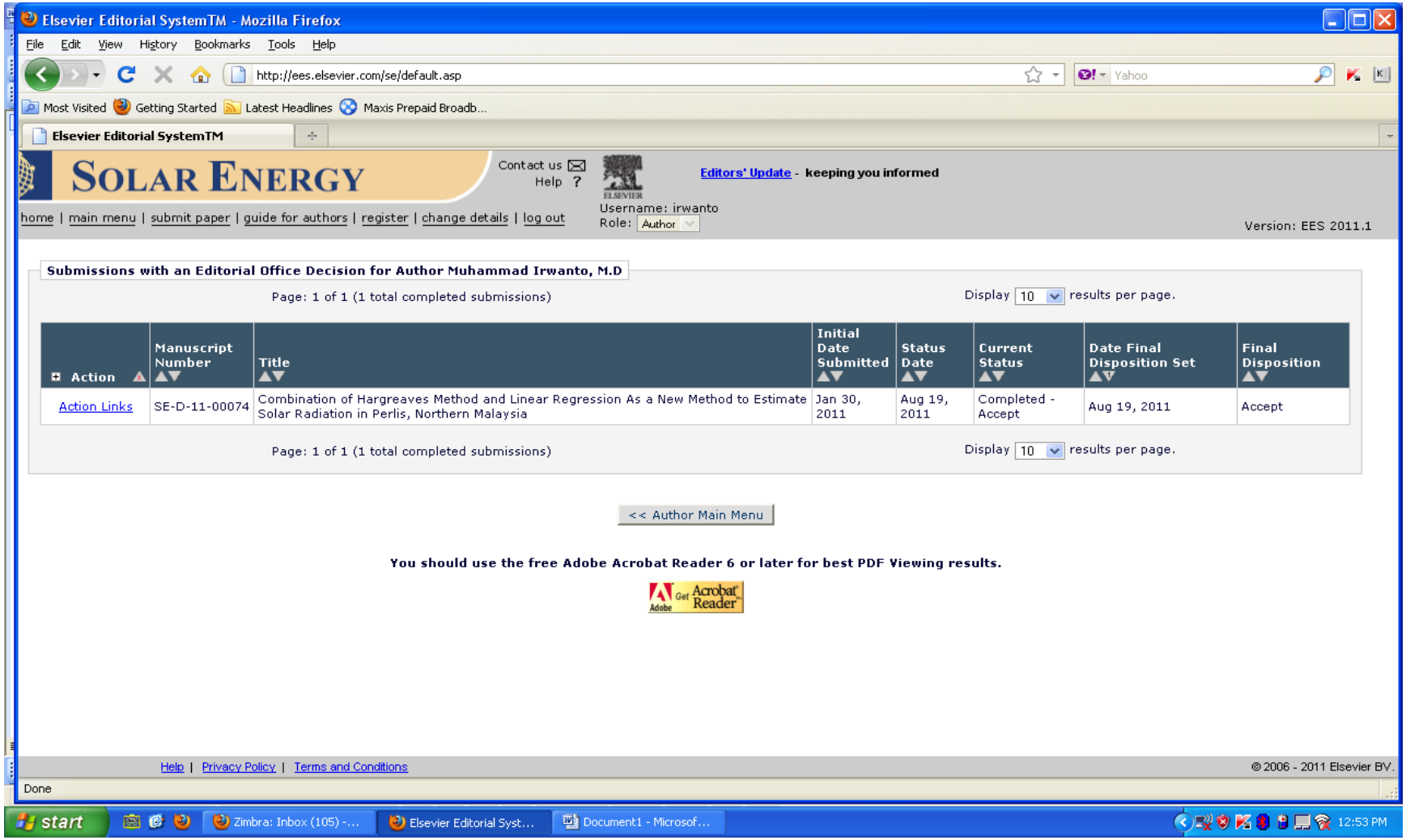
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Date: Aug 18, 2011
To: "Muhammad Irwanto" irwanto@unimap.edu.my
From: "Solar Energy" se@elsevier.com
Subject: Your Submission

Ms. Ref. No.: SE-D-11-00074R1
Title: Combination of Hargreaves Method and Linear Regression As a New Method to Estimate Solar Radiation in Perlis, Northern Malaysia
Solar Energy

Dear Mr Muhammad Irwanto,

I am happy to inform you that your paper is now recommended for publication.

Thank you for submitting your work to this journal.

With best regards,

Frank Vignola
Associate Editor
Solar Energy

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