

Title	The reality of the PM2.5 problems : the importance of referring to primary information
Sub Title	
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Publisher	Faculty of Science and Technology, Keio University
Publication year	2015
Jtitle	New Kyurizukai No.19 (2015. 7)
JaLC DOI	
Abstract	
Notes	
Genre	Article
URL	<a href="https://koara.lib.keio.ac.jp/xoonips/modules/xoonips/detail.php?koara_id=KO50001003-00000019-0008">https://koara.lib.keio.ac.jp/xoonips/modules/xoonips/detail.php?koara_id=KO50001003-00000019-0008</a>

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## The reality of the PM<sub>2.5</sub> problems

~ The importance of referring to primary information ~

Tomoaki Okuda

In Japan the government established environmental standards for PM<sub>2.5</sub> in 2009. In 2013, the outbreak in China of PM<sub>2.5</sub> high concentration was bandied about as an issue of serious concern. Indeed, PM<sub>2.5</sub> is now a major social issue. It was more than a decade ago that I became involved in PM<sub>2.5</sub> as a research scientist. But I could hardly imagine that my research target, PM<sub>2.5</sub>, would come to the fore as one of the most popular keywords (The 30th "Top Ten You-Can Keywords of the Year" Awards, 2013)

However, I often feel like something is wrong with the way mass media report on PM<sub>2.5</sub>. As far as I know, the actual

state of things about PM<sub>2.5</sub> is as follows: ① It's not true that the average PM<sub>2.5</sub> concentration in Japan has been rising over the past several years; ② Admitting that in January 2013 PM<sub>2.5</sub> concentration in China was higher than the average for the past, that of Japan for the same period remained unchanged; ③ Except the cases of exceptionally high PM<sub>2.5</sub> concentration outdoors, normally there is little difference between outdoor and indoor concentrations; and ④ Wearing a mask to avoid inhaling PM<sub>2.5</sub> is almost nothing but a placebo because it's very difficult to use a mask closely adhered to your face. ... What do you think? You may have found that my points are pretty much different from the impressions you received from mass media reports. Especially from 2013 to 2014, I was repeatedly asked to give public lectures on PM<sub>2.5</sub>. Most of the audience appeared surprised at what I indicated.

To tell the truth, the data behind my opinion are all published by reliable public organizations. In other words, anyone can access such primary information. To our regret, mass media reports often fail to communicate primary information correctly. More than once did I say to myself, "How did they draw such an interpretation from this primary information?"

Such is not limited to PM<sub>2.5</sub> problems. If you have come across news you are curious about, refer to primary information as much as possible so that you can properly interpret the problem on your own. This is a very important ability given that our modern society is flooded with information of all kinds. In my classwork, therefore, my students are encouraged to develop their own opinions through discussions on environmental problems, using reliable primary information.

## Science and Technology Information

### The 16th KEIO TECHNO-MALL 2015 "More Partnerships, More Dreams"

KEIO TECHNO-MALL is an annual event to widely disseminate research results from the Keio Faculty and Graduate School of Science and Technology while also serving as a vital venue of encounters for industry-academia-government collaborations such as joint research and technological transfer.

At booths, you can see faculty members and students making presentations of their research results through real-machine demonstrations or display of posters. Every year, this event attracts many visitors – from businesses, government/public organizations, and other universities, etc.



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Date: December 4 (Fri.), 2015 10:00 ~ 18:00

Venue: Tokyo International Forum (Exhibition Hall 2, Basement 2)

#### Featured main event:

"Brain, Mind and Happiness" by Prof. Takashi Maeno (Graduate School of System Design and Management) and others

#### Round-table sessions:

"Engineering Approach to the Environment Issues" by Prof. Toshihisa Ueda, facilitator (Department of Mechanical Engineering)

"Future Society with Intelligent Robots" by Prof. Takahira Yamaguchi, facilitator (Department of Administration Engineering)

#### Editor's postscript

Dr. Okuda is seriously tackling problems relating to PM<sub>2.5</sub>. I could see his devoted attitude while interviewing him. From time to time, he appeared particularly eager to let us have the correct knowledge of PM<sub>2.5</sub>. I would like you to read the column on this page, which may drastically change your stereotype idea about PM<sub>2.5</sub>.

The photograph on the front cover is an attempt to show Dr. Okuda collaborating with the particle sampler which is his original development and is installed outdoors. Although I couldn't imagine how the photo would work out until the front cover design was completed, the blue sky-like background was marvelously reproduced. It was a satisfactory finish that well reflected the image of his research.

(Manami Matsubayashi)

## 新版 穷理图解

New Kyurizukai  
No. 19 July 2015

Editing : "New Kyurizukai" Editing Committee

Photographer : Keiichiro Muraguchi

Designers : Hiroaki Yasojima, Yukihiko Ishikawa (GRID)

Cooperation for editing : SciTech Communications, Inc.

Publisher : Tojiro Aoyama

Published by : Faculty of Science and Technology, Keio University

3-14-1, Hiyoshi, Kohoku-ku, Yokohama, Kanagawa 223-8522

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