

S. N. Bose Memorial Lecture



The Satyendra Nath Bose National Centre for Basic Sciences, Kolkata organizes the S N Bose Memorial Lectures as a tribute to the Late National Professor Satyendra Nath Bose.

About the Speaker



Masashi Hayakawa was born in Nagoya, Japan in 1944.

Dr. Hayakawa has been a Professor of The University of Electro-Communications, Tokyo since 1991. He has authored and co-authored more than 400 refereed journal papers and several edited volumes and books. His interests

include: magnetospheric/ionospheric radio emission, atmospheric electricity, seismo-electromagnetics, direct and inverse problems of wave propagation, modern methods of signal processing seismogenic radio emission. He was the President of the Society of Atmospheric Electricity of Japan and currently is in the Editorial Board of several Journals. He received numerous awards for his contributions.

P a s t S p e a k e r s

Leon Van Hove	1988	R A Mashelkar	2000
B M Udgaonkar	1990	Albert Libchaber	2001
H E Stanley	1991	Jayant V Narlikar	2002
C H Llwellyn Smith	1992	Martin Blume	2003
E C G Sudarshan	1994	S. R. S. Varadhan	2004
V Singh	1995	Abhay Ashtekar	2005
B V Sreekantan	1996	Rashid A Sunyaev	2007
Kazuo Fujikawa	1996	Ashoke Sen	2008
Sir Sam F Edwards	1996	Wolfgang Ketterle	2009
C N R Rao	1999		

20th

S. N. Bose Memorial Lecture

on

Is prediction of earthquakes possible by means of
electromagnetic effects?

by

Masashi Hayakawa

University of Electro-Communications,
Chofu, Tokyo, Japan

on

16 March 2010
at 5.00 pm

in the

Rabindra Okakura Bhawan Auditorium
Salt Lake, Kolkata 700 064



S N Bose National Centre for Basic Sciences

Kolkata

A b s t r a c t



Is prediction of earthquakes possible by means of electromagnetic effects?

Earthquakes (EQ) cause disasters of all kinds. For the 1995 Kobe earthquake, the monetary loss was estimated at ten billion US dollars. The loss of lives and the misery caused cannot be estimated. The majority of victims (some tsunamis are exceptions) are killed by the collapse of building right at arrival of the main shock waves. There is virtually no escape time once the quake has started and this underlines the importance of short term EQ prediction.

In 1997, in Japan it was concluded that the conventional mechanical measurement (seismic observations of crustal movements) is unable to make short-term EQ prediction. This means that we have to explore an alternative method for short-term EQ prediction. Higher-order (microscopic) effects of the lithosphere would provide us with the precursory effect of an EQ signature. This kind of microscopic effects would result in electromagnetic signals probably due to the generation of currents in and around the EQ hypocenter. We will discuss the advantages of this electromagnetic technique for short term EQ prediction.

S N Bose National Centre for Basic Sciences

Block JD, Sector III, Salt Lake,
Kolkata 700 098



On behalf of the Centre

I have great pleasure in inviting you
to the

20th S N Bose Memorial Lecture
at 5.00 pm on Tuesday,
the 16th March 2010
at the

Rabindra Okakura Bhawan Auditorium
DD-27A/1, Salt Lake
Kolkata - 700 064.

Professor Ken Lynn,
Ionospheric Systems Research, Australia
will grace the occasion as the Chief Guest.

Arup K Raychaudhuri
Director