whilst simultaneously seeding new dimensions to the science-scape of PRL.

Lal's enduring contributions to scientific knowledge have been widely recognized by world academies whose fellowship he adorned with rare distinction. Many honours and awards too were showered on him, which he wore with characteristic humility and disinterestedness. A long time collaborator, P. B. Price, recounts how an undying curiosity and an adventure of ideas constantly possessed Lal. A letter that he received many years ago, whilst Lal was still in the throes of a delirious fever, expresses it eloquently, 'I have been thinking of all sorts of experiments and many in fact were a great success in my dreams. So, I thought I should write to you about several of these….'

No written account of Lal's work can capture the full range of his impassioned life and none would adequately describe the essence of its romance without the picture of his soulful companion and wife Aruna Lal who became an indistinguishable component of the colourful fabric of their life and work. Aruna's passing away in 1993 made Lal increasingly more remote even as he bore her absence stoically and plunged deeper in his work, which continued undiminished except for brief periods in and out of nursing homes. The Aruna Lal foundation that he established in her memory at PRL, Ahmedabad to support bright young students through college and to distinguish creative young minds engaged in researches of Earth and space environments, as well as endowments at TIFR and the University of California to support bright young scientists, expose another of Lal's understated passions for catalysing creativity and excellence. Many of his former students recall his persistent questioning about the novelty and originality of their work, constantly urging them by his own example to strain their scientific work towards the rigorous and the imaginative. They warmly recount how his expansive mind expressed itself in opening new vistas at every turn, explorations whose outcomes have shaped the lives of his students and colleagues, many of them carrying the torch forward to make notable scientific contributions themselves.

Devendra Lal finally departed this life in splendid isolation – his characteristic ethic winning to the end, leaving behind a host of friends and admirers whom the memory of a charismatic scientist, at once warm and remote, will forever haunt.

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Sri Niwas (1946–2012)

An abrupt end to the illustrious career of Sri Niwas, as teacher and researcher, came on 15 November 2012. He was born on 4 July 1946 in the village of Rakahat in Gorakhpur (Uttar Pradesh) to Smt Indrasana and Sri Ram Adhar Pandey.

Sri Niwas was closely associated with the Banaras Hindu University (BHU), having earned all his post-secondary degrees (B Sc Hons 1966, M Sc Geophysics 1968 and Ph D 1974) from the university. His Ph D thesis was entitled 'Theoretical treatment of some problems on electrical behaviour of layered earth system'. After earning his doctorate from BHU, Sri Niwas joined the Indian Institute of Technology Roorkee (then, University of Roorkee) as a post-doctoral fellow in 1974. He worked at the institute in various capacities: a Pool Officer (1976–1977), Lecturer (1977–1979), Reader (1980–1991) and as Professor (1991–2011). He is credited with founding the Department of Geophysics at the University of Kurukshetra in 1989. Though he superannuated from IIT Roorkee in 2011, he continued his association with the institute as a Professor-Emeritus until his demise. He served as a Visiting Professor at the Federal University, Bahia, Brazil during 2000–01. He was an excellent teacher and always championed the cause of students which is reflected in his continued and long-lasting relationship with them.

Sri Niwas, along with Vinod K. Gaur (who was then at IIT Roorkee) and several other faculty members, designed a course curriculum in geophysics with an ideal blend of both theory and practice. This served as a model for a long time and motivated other geophysics departments in the country to modernize their course structures. Apart from his contribution to the growth of geophysics education in the country, Sri Niwas also profoundly impacted research in geophysical exploration that included inversion of geophysical data, geo-electromagnetism and geo-hydrology (exploration, development and management of groundwater). He was a strong advocate of hypothesis-driven research and argued for examining a physics-based relationship between input and observation.

He pioneered applications of inverse theory to several geophysical problems in the country. He extensively used geo-electric exploration – a tool vital for imaging the near-surface subsurface, for exploring and exploiting natural resources and managing the environment. The near subsurface is taken as stratified media with layers having variable thicknesses and the main challenge lies in resolving this thickness with innovative experimental design and interpretation methodologies. Sri Niwas devised suitable, simplest approximations of system matrix function in terms of exponential

functions and used them to develop both least squares and minimum-norm solutions. He imaginatively used singular value decomposition for designing robust methodology and applied it to various geological situations. His methodology was suitable to deal with a large class of geological environments and finds wide application in industry and academia.

Sri Niwas authored more than 100 research papers, in addition to editing and contributing chapters to several academic books. He mentored 12 Ph D and 110 M Tech students. For his pioneering research work, he was awarded the prestigious S. S. Bhatnagar Prize in 1991. He was elected to the fellowship of the Indian National Science Academy (Delhi), the Indian Academy of Sciences (Bangalore), the National Academy of Sciences, India (Allahabad), the Indian Geophysical Union (Hyderabad) and the Association of Exploration Geophysicists (Hyderabad). Sri Niwas served on several scientific committees of DST and CSIR.

Sri Niwas was a very valuable colleague and a very helpful, understanding and wise advisor to his students. He will be missed by several people, who moan his sudden demise. He is survived by his wife (Shashi Kala) and two children, one of whom recently obtained a Ph D in seismology from GFZ, Potsdam (Germany).

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