

*Department of Physics & Astronomy  
Complexity Science Seminars*

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Science A 121*

# Martensitic shape-memory alloys: novel pseudo-spin glasses?

A lecture by

**Dr. David Sherrington**

Rudolf Peierls Centre  
for Theoretical Physics

**University of Oxford**

Spin glasses are systems with complex co-operative behaviour due to the combination of quenched randomness and frustration due to competitive interactions and/or constraints. They have been the subject of extensive investigation over more than three decades, studies that have demonstrated unusual, often non-ergodic, behaviour and have led to many new concepts and techniques, as well as application of that knowledge to other many-body systems in physics, information and computer science, biophysics and econophysics. This talk will consider martensitic alloys by analogy with spin glass physics. It will show how minimal modelling can lead to conceptual transfers and predictions and will compare these with recent experiments and simulations.



**Current positions:** Emeritus Wykeham Professor of Physics at the University of Oxford -- having headed Oxford's Department of Theoretical Physics for the past 15 years. External Professor of the Santa Fe Institute (NM).

**Prior positions:** University of Manchester, University of California San Diego (at La Jolla), Imperial College, London, with extended periods at IBM (Yorktown Hts., NY), Institute Laue Langevin (Grenoble, France), Schlumberger-Doll (Ridgefield CT), and Los Alamos National Lab (NM).

**Principal research interest:** The statistical physics of complex systems, ever since his introduction of the canonical soluble spin glass model in 1975. Has also worked in several other areas of theoretical physics.

**Professional affiliations:** Fellow of the Royal Society the American Physical Society, the American Physical Society and the UK Institute of Physics. Member of the European Academy of Sciences.



Everyone is welcome!

