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## Physical Scientist (Research) 12

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### GS-1301-12 Research

NOTE: THE SENTENCE IN PART I DESCRIBING THE PURPOSE OF THE POSITION AND PARTS II AND III IN THEIR ENTIRETY ARE PERMANENT PARTS OF THE LIBRARY AND MAY NOT BE CHANGED OR EDITED IN ANY WAY.

#### I. INTRODUCTION

This position is located in

Incumbent conducts independent research or is a member of a team performing research on specific problems in physical sciences.

#### II. MAJOR DUTIES AND RESPONSIBILITIES

Incumbent investigates long range and short term problems, recommends solutions, and writes scientific papers for publication. The focus may be oceanographic, geodetic, meteorological, or other, requiring use of a variety of physical science theories and techniques, to assess the dynamic interaction of the phenomena studied. The following are examples of the work performed:

Oceanographic investigations centering on fluxes of energy, momentum and materials through the air-sea interface, the transport and composition (thermal and chemical) of ocean and coastal water masses and the structure and dynamical processes on the sea-floor.

Oceanography, marine meteorology and related disciplines to improve understanding of environmental processes in coastal and open-ocean systems.

Dynamics of geophysical fluids in the atmosphere, hydrosphere, and cryosphere, over a wide range of time and space scales. Potential applications include deterministic atmospheric forecasting, life cycle of hurricanes, and clear air turbulence.

Atmospheric and environmental problems caused by changes in atmospheric composition associated with natural and manufactured emissions.

Global and climate change, acid deposition, atmospheric chemistry, and meteorological and biological problems involving interaction between lower atmosphere and underlying surface, primarily vegetation.

Chemical and physical processes in the earth's atmosphere to advance the capability of monitoring, predicting, and controlling the atmosphere.

Understanding and prediction of coastal and estuarine processes and interdependencies with the atmosphere, land, and sediments.

#### III. FACTOR LEVELS

Factor 1 - Research Situation/assignment Degree B, 4 pts.

The research situation is of greater than average difficulty and complexity. The investigation often requires a series of complete but related studies. Investigations often require unconventional or novel approaches, including sophisticated research techniques.

Completed research will result in a series of publishable contributions to knowledge to answer questions and suggest new avenues of further study. The research will make contributions to the validation or modification of scientific theory or methodology, which may result in changes to existing products, processes, techniques or practices.

Factor 2 - Supervision Received Degree B, 4 pts.

Incumbent is assigned a broad problem area with freedom to identify, define and select specific problem for study. With little or no supervisory assistance, incumbent formulates hypotheses, develops and carries out plan of attack. Supervisor is kept informed through informal discussions of general plans and progress of work. Proposals to alter the level or direction of investigation are subject to supervisory review and approval. Completed work is reviewed for overall results.

Factor 3 - Guidelines and Originality Degree C, 6 pts.

Significant gaps or contradictory findings exist in relevant scientific literature. Incumbent applies a high degree of originality in defining and delimiting problems for study. Incumbent applies new techniques and original methods of attack to solution of important problems in physical science phenomena. These problems present novel or unprecedented aspects.

Factor 4 - Qualifications and Scientific Contributions Degree B, 8 pts.

Incumbent is author of one or more papers of considerable interest to other researchers in the assigned research situation. Accomplishments demonstrate the ability to independently conduct research or contribute significantly to a research team. Incumbent consults with others on results of the research.

Total Points: 4 + 4 + 6 + 8 = 22

This position is exempt from coverage under the Fair Labor Standards Act.

#### **IV. UNIQUE POSITION REQUIREMENTS**

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