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CHAPTER 2

Some Aspects of High Pressures at Low Temperatures

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I. INTRODUCTION

Three main reasons for wanting to use high pressures at low temperatures can be distinguished as follows. In the first place, the phenomenon to be studied may itself be specifically confined to low temperatures. We know from the third law of thermodynamics that a system in internal thermodynamic equilibrium must take up an "ordered" state at sufficiently low temperatures; we may regard the onset of superconductivity or magnetic transitions in certain alloys and insulators as examples of this general tendency. To study such transitions