Preface

The workshop "Primitive forms and related subjects" was held in Kavli IPMU, University of Tokyo, during February 10-14, 2014. There were over eighty participants, more than one half of which were from overseas such as Austria, China (including Hong Kong), Korea, France, Mexico, Russia and U.S.A.

The purpose of this workshop was to present the status of the rapidly developing subject of primitive forms. A primitive from is a top degree differential form on a family of (open) Calabi-Yau varieties with the defining property that it determines a filtration opposite to the semi-infinite Hodge structure and induces the flat (=Frobenius) structure on the deformation parameter space. Since late 1990s, primitive forms have drawn attention from both mathematicians and physicists. They are expected to describe objects in complex geometry that are mirror to invariants in symplectic geometry like Gromov-Witten invariants or Fan-Jarvis-Ruan-Witten invariants.

In this workshop, there were three basic lecture series as well as 16 conference talks by experts from both mathematicians and physicists with various viewpoints. There were fruitful discussions during the conference, with significant ideas exchanged and explored. The present volume is the proceedings of this workshop, and contains 13 contributions on the workshop topics. We hope that this volume will contribute to further developments on primitive forms and related subjects.

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All papers in this volume have been refereed and are in final form. No version of any of them will be submitted for publication elsewhere.