Program of the
Arbeitsgemeinschaft
on Mirror symmetry,
Oberwolfach, Oktober 5 -October 12, 1997

Monday

GROMOV-WITTEN INVARIANTS, QUANTUM COHOMOLOGY AND WDVV-EQUATIONS

Lecture 1. *Spaces of stable maps.*
Jörg Wildeshausen (Münster).

Lecture 2.*Gromov-Witten Invariants*
Christopher Deninger (Münster).

Lecture 3. *Quantum cohomology*
Annette Werner (MPI Bonn).

Lecture 4. *Applications to Enumerative Geometry*
Klaus Künnemann (Münster).

Tuesday

RATIONAL CURVES ON THE QUINTIC THREEFOLD.

The purpose of this day is to present ideas around the mathematical verification of the "numbers of rational curves" on quintic threefolds.

Lecture 5. *The computation of Candelas.*
Georg Hein (HU Berlin).

Lecture 6. Enumeration of rational curves via torus action
Ralf Kaufmann (MPI Bonn).

Lecture 7. Quantum Differential Systems
Bernd Kreußler (Kaiserslautern).

Lecture 8. Equivariant Quantum Cohomology
Klaus Wirtmüller (Kaiserslautern).

Wednesday

MIRROR SYMMETRY IN PHYSICS

*During this day we suggest to discuss the origin of mirror symmetry from the representation theory of $N = 2$ superconformal algebra. As a general reference for this topic we suggest the book of B. Greene [**?**].*

Lecture 9. $N = 2$ superconformal field theories.
Christian Adler (Hamburg).

Lecture 10 Green-Plesser mirror construction for Fermat hypersurfaces
Jozef Steenbrink (Nijmegen).

Thursday

MIRROR SYMMETRY AND TORIC GEOMETRY

*The purpose of this day is to explain the mirror symmetry constructions and to check its consequnces for Calabi-Yau hypersurfaces and complete intersections in Gorenstein toric Fano varieties. As a general review of this topic we suggest [**?**].*

Lecture 11 Mirror construction for hypersurfaces in toric varieties.
Klaus Altmann (HU Berlin).

Lecture 12 Periods of Calabi-Yau hypersurfaces.
Jan Stienstra (Utrecht).

Lecture 13 Mirror construction for Calabi-Yau complete intersections in toric varieties.
Anna Beliakova (Bern).

Lecture 14 Topological test for mirror symmetry and string-theoretic Hodge numbers.
Dimitrios Dais (Tübingen).

Friday
MIRROR SYMMETRY "IS" T-DUALITY

*The purpose of this day is to give a presentation of the mathematical results related to the conjectural mirror construction due to Strominger-Yau-Zaslov [**?**] and its recent confirmation in the work of Gross-Wilson [**?**] for $K3$-surfaces and some Calabi-Yau 3-folds. As a general review of this material we suggest [**?**].*

Lecture 15. Mirror symmetry for lattice polarized K3 surfaces.
Herbert Kurke (HU Berlin).

Lecture 16. Special Lagrangian Submanifolds
Christian van Enckevort (utrecht).

Lecture 17 Mirror symmetric families and special Lagrangian fibrations on $K3$-surfaces.
Claudio Bartocci (Genova).

Lecture 18 T-duality for Borcea-Voisin mirror pairs of Calabi-Yau 3-folds.
Balasz Szendroi (Cambridge).