Yuki Iwahori (Kanazawa Univ.)
"Basic properties of Jacobi forms"

Abstract: Jacobi forms play an important role in the theory of automorphic forms. In this survey talk I will explain the following things:

Part I: Jacobi forms in the Book of Eichler-Zagier[E-Z]
1. Definition of Heisenberg groups, Jacobi groups and Jacobi forms
2. Some properties of Jacobi forms (Theorem 1.2, 1.5, 9.5, 2.2 in [E-Z])
3. Relations between Jacobi forms and modular forms of half-integral weight (Section 5 in [E-Z])
4. Shift operator V and Saito-Kurokawa lifts. (Section 6 in [E-Z])

Part II: Jacobi forms with respect to automorphic forms on $\mathrm{SO}(2, s+2)$
1. (Notation) Automorphic forms on orthogonal groups and Fourier-Jacobi coefficients.
2. (Properties) Analogues of 3, 4 in Part I for SO(2,s+2)
3. Estimation of dimensions of the space of automorphic forms on $\mathrm{SO}(2, s+2)$

Takashi Yoshinaga (Ritsumeikan Univ.)
"On the mass connected with primitive solutions of quadratic Diophantine equations"

Abstract: We are interested in a quantity which is related to the number of *primitive solutions* of quadratic Diophantine equations in $n\,(>2)$ variables. The quantity coincides with a mass for a special orthogonal group in dimension $n-1$ by the mass formula due to Shimura. We present an exact formula for the mass under a simple assumption. This is a joint work with Manabu Murata.

Hiroki Aoki (Tokyo Univ. of Science)
"Structure theorem of the space of automorphic forms of several variables"

Abstract: In this talk we study some effective methods to determine the stucture of the space of automorphic forms of several variables, particularly by using Jacobi forms.

Martin Westerholt-Raum (MPI)
"Formal Fourier Jacobi expansions"

Abstract: This talk is based on recent joint work with Jan Bruinier (arXiv:1409.4996). Every Siegel modular form has a Fourier Jacobi expansion. By omitting the convergence condition, we create a formal analogue: A formal series of Jacobi forms such that their Fourier coefficients satisfy relations which are inspired by symmetries of Fourier coefficients of Siegel modular forms. Every such formal series, we show, converges and thus is modular. The main application of this result is a proof of Kudla's Modularity Conjecture for orthogonal Shimura varieties. We will sketch this and one further application to the computation of Siegel modular forms.

Bernhard Heim (German Univ. of Technology in Oman)
"Jacobi forms, Lifts and Symmetries"

Abstract: In this talk I will report on recent results on the characterization of Borcherds and Maass lifts by symmetries. This includes J. Kreuzers recent result on the classification of simultaneous Borcherds and Maass lifts on the paramodular group of level 3. Further I will talk on a the question how Borcherds lifts can be characterized by divisors. This is a joint work with A. Murase.

Nils-Peter Skoruppa (Univ. of Siegen)
"Theta Blocks"

Abstract: As it turned out a while ago there is an easy, yet extremely powerful construction of Jacobi forms, which has also consequences for the theory of elliptic modular forms. Despite its simpleness this construction is related to various interesting problems concerning trigonometric polynomials, the arithmetic theory of lattices and the theory of Kac-Moody algebras. We shall report about this construction, the mentioned connections to other theories and recent results. Many of these results would not have been discovered without a lot of preceding computational experimentation. We shall also try to report about this aspect. The talk is partly based on joint work with Valery Gritsenko and Don Zagier.

Hiroshi Sakata (Waseda Univ. Senior High School)
"A trace formula for Jacobi forms and it's applications"

Abstract: We study about a trace formula for Jacobi forms, and give some trace relations between it and trace formulas for elliptic modular forms in the cases of square-free level and prime power level. Moreover we construct the level-index changing operator on Jacobi forms by using their trace relations.

Winfried Kohnen (Univ. of Heidelberg)
"Applications of Jacobi forms"

Abstract: Jacobi forms over the past few years have found many applications in the theory of modular forms, e.g. classically regarding the Saito-Kurokawa lift or in connection with Heegner points on elliptic curves. There are also more recent applications, including growth estimates for the Fourier coefficients of Siegel cusp forms of arbitrary degree, a characterization of cusp forms of degree two in terms of the growth of their Fourier coefficients or an explicit bound for the first sign change of an arbitrary non-zero Siegel cusp form. I intend to report on some of the latter topics.

Shuichi Hayashida (Joetsu Univ. of Education)
"Relations among Fourier-Jacobi coefficients of Siegel-Eisenstein series and their applications"

Abstract: In this talk I will explain a lifting from pairs of two elliptic modular forms to Siegel modular forms of half-integral weight of even degree under the assumption that the constructed Siegel modular form does not identically vanish. For the proof of the lift we need to show a certain generalization of so-called "Maass relation". This is a relation among Fourier-Jacobi coefficients of Siegel-Eisenstein series and of certain Siegel cusp forms.

Eric Stade (Univ. of Colorado Boulder)
"Automorphic forms, archimedean L factors, Whittaker functions, and Barnes integrals"

Abstract: As is well-known, the analytic continuation and functional equation of the Riemann zeta function are best understood if the zeta function is first multiplied by a "gamma factor." An analogous fact is true for L functions attached to automorphic forms on higher rank groups. But here, the "gamma factors" are more complicated. They can be understood in terms of "archimedean zeta integrals," which have explicit realizations as integrals of Barnes type.

Siegfried Böcherer (Univ. of Mannheim)
"Klingen Eisenstein series for Siegel modular forms and for Jacobi forms"

Abstract: The Fourier-Jacobi expansion of Siegel Eisenstein series consists of linear combinations of Jacobi Eisenstein series, that of Siegel cusp forms of Jacobi cusp forms. For Klingen Eisenstein series (say of degree 2), there is an Eisenstein part and a cuspidal part in its Fourier-Jacobi coefficients. I will describe explicit formulas for these and discuss some properties and applications.
In my talk I will mainly consider the degree two case, but the general case is similar (and will be the subject of an almost finished PhD thesis by T.Paul, Saarbrücken).

Nils-Peter Skoruppa (Univ. of Siegen)
"Explicit constructions of Jacobi forms over number fields"

Abstract: Jacobi forms over number fields should play the same role in the arithmetic theory of Hilbert modular forms as Jacobi forms over the rational numbers. A theory of such forms was developed by Hatice Boylan in her thesis, a monograph explaining this theory is in preparation. However, such a theory comes to alive only if one can easily construct examples of such forms. I shall report on various methods to construct explicitly in closed form Jacobi forms over number fields. Parts of my talk concern joint work with Hatice Boylan and Shuichi Hayashida.

Fredrik Strömberg (Univ. of Nottingham)
"Vector valued Hilbert modular forms and Shimizu L-functions"

Abstract: The Shimizu L-functions are important for understanding of the parabolic contributions to trace formulas and in particular dimension formulas for Hilbert modular forms. I will show how certain generalized Shimizu L-functions appear in a dimension formula for vector-valued Hilbert modular forms and how they can be related to L-functions of ray class characters. I will then show how the special values of these L-functions at the point $s = -1$ can be evaluated using a technique developed by Siegel.

Tomoyoshi Ibukiyama (Osaka Univ.)
"Jacobi forms of general degree"

Abstract: I will talk on theories on Jacobi forms of general degree. The talk includes at least three new (still unpublished) results as well as general survey on what are known and what are open. For example, as far as time allows, I will talk on
(1) Two definitions on vector valued Jacobi forms and (partial) results on their relations.
(2) Correspondence in index one case with Siegel modular forms of half integral weight for any general levels and characters, including skew holomorphic cases.
(3) Relations between the Taylor coefficients of Jacobi forms of any matrix index and vector valued Siegel modular forms of integral weight using differential operators. (This is a very subtle theory.)
(4) Structure theorems of the modules of holomorphic Jacobi forms over the ring of Siegel modular forms for small levels of small indices.
(5) Dimensions and structures of vector valued holomorphic Jacobi forms of degree two of level one.
(6) Level-index change operator and application to a description of Jacobi forms of prime index.