

⑤ Though this talk is called "The Grandproblem or basis problem for modular forms etc." I cannot give a ~~short~~ survey of all the developments in the direction of answering the fundamental problem.

In particular, I will not talk about ~~one of the major developments~~ the ~~most~~ probably most well-known ~~attempt~~ <sup>tools</sup> to ~~solve~~ give an answer to the fundamental problem. Of course, there have already been ~~taken~~ taken into consideration by Hecke himself; even more it is just the same paper which I already cited twice, where Hecke states the following:

--- cite ---

This last question has attracted a lot of people. The major step to answer this question was probably made by Eichler. I cite again --

(A)

He continues then

(B)

And then he continues with a more detailed explanation that theta series provide a partial answer to the basis problem.

However, note that "basis problem" refers to the question to describe explicitly a basis for a given space of modular forms. But for most people <sup>now</sup> "basis problem" is ~~immediately~~ ~~the~~ with the other question, whether such an explicit description can be obtained using theta series.

The final answer to this latter question is probably given by the monograph

Hijikata, Pizer, Shimura: The basis problem ( $\approx 1990$ )

In any case theta series ~~do not suffice~~ <sup>do not suffice</sup> to answer the basis problem for Jacobi forms, so one ~~needs~~ <sup>needs</sup> the ideas.