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15 June 04

Dear Atle,

It was good talking to you & Betty last night She brings good cheer.

On August 21, 03 I sent you a copy of your MS by air mail, and telephoned you to say that I had done so. I am sorry you never got it. I should have called you again, but I was not well enough to do so during the Winter.

Here is another copy. Best regards to you both from both of us

Chandra

Re: the replacement copies sent by K. Chandrasekharan

1) The xerox copy that Selberg received in June 2004 had the following self-memo inscribed on the upper right corner of page 1.

KC received 29 August 95.
He [Selberg] asked for a copy on 20 Aug 2003.
Sent it on 21 Aug 2003 (air mail).

2) The copy that Chandrasekharan sent in Aug 2003 does indeed seem to be lost: it turned up neither in Selberg's office nor home.

3) Page 2 of the copy that KC received from Selberg in 1995 differed very slightly from the original transparency. See copy below.

For $n \geq 1$, given a discrete lattice of translations in euclidean n space whose elements ω (each with n components $\omega^{(i)}$) are generated by n linearly independent elements $\xi_1, \ldots, \xi_n$ (with nonsingular matrix $\Omega = (\xi_j^{(i)})$. Assume the lattice is irreducible in the sense that if an element ω has one component $\omega^{(i)}$ equal to zero, then all components of ω are zero: $\omega = 0$. Denote by Γ_∞ the group with elements $\begin{pmatrix} 1 & \omega \\ 0 & 1 \end{pmatrix}$, generated by $\begin{pmatrix} 1 & \xi_j \\ 0 & 1 \end{pmatrix}$ for $j = 1, \ldots, n$.

If we now adjoin to Γ_∞ an element

$M = \begin{pmatrix} \alpha & \beta \\ \gamma & \delta \end{pmatrix}$ with n components $\begin{pmatrix} \alpha^{(i)}, & \beta^{(i)} \\ \gamma^{(i)}, & \delta^{(i)} \end{pmatrix}$

and $\alpha\delta - \beta\gamma = 1$ ($\alpha^{(i)}, \beta^{(i)}, \gamma^{(i)}, \delta^{(i)}$ real)

<u>When is the resulting group discrete?</u> left til later $\boxed{\text{Case } n=1}$ $\boxed{\text{case } n>1}$

2. Put $D = \|\xi_j^{(i)}\| = \|\Omega\|$.

From a theorem of Minkowski:

<u>For $t_i > 0$ and $\prod_{i=1}^{n} t_i \geq D$ $\exists\, \omega \neq 0$</u>

<u>with $|\omega^{(i)}| \leq t_i$ for $i = 1, \ldots, n$.</u>

Will be used repeatedly.