Reply To Report

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1. I have consulted the paper [1] of B.C. Carlson but in my opinion there is no chance to get the limiting values as $k \to 1$ from this paper.

2. Of course I have consulted the corresponding chapters of the famous NIST handbook of Mathematical Functions, but no limiting values (as $k \to 1$) for Jacobi's theta functions are given there.

3. The reason that I have chosen the old notation of the theta functions (Jacobi's old notation) is the simple representation of the Jacobi's elliptic functions sn, cn and dn as a quotient of two theta functions, see formula (1) in my manuscript.

4. The crucial point is formula (5). Without this formula (or an analogous integral formula for $\log(\mathrm{H}(v-w)/\,\mathrm{H}(v+w))$, $\log(\mathrm{H}_1(v-w)/\,\mathrm{H}_1(v+w))$ or $\log(\Theta_1(v-w)/\Theta_1(v+w))$) I don't think that it is possible to prove Theorem 1. Another possibility would eventually to find estimates for $\Theta(u,k)/\Theta(0,k)$. I have tried this way but the proofs are much harder.

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