On quantum modular forms of non-zero weight

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Quantum modular forms are functions f defined on the rationals whose period functions, such as $\psi(x) := f(x) - x^{-k} f(-1/x)$ (for level 1), satisfy some continuity properties. In the case of $k = 0$, f can be interpreted as a Birkhoff sums associated with the Gauss map. In particular, under mild hypotheses on G, one can show convergence to a stable law. If $\mathrm{Re}(k)$ is non-zero, the situation is rather different and we can show that mild conditions on psi imply that f itself has to exhibit some continuity property. Finally, we discuss the convergence in distribution also in this case. This is a joint work with Sary Drappeau.