Title: A correspondence theorem for L-functions and partial differential operators

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Given an L-function $F(s)$ from the extended Selberg class, we associate a function $\Phi_F(x, y)$. We show that the functions $\Phi_F(x, y)$ are, in the general case, the analogs of the modular forms associated with the GL_2 L-functions. Indeed, we prove that every $\Phi_F(x, y)$ is eigenfunction of a certain partial differential operator. Moreover, we prove a general correspondence theorem for such L-functions involving the functions $\Phi_F(x, y)$.

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