Motivic interpretation of higher Green's functions

Tiago JARDIM DA FONSECA[1]

[1] UNICAMP, Brazil

A common theme in the theory of modular forms is the study of algebraicity phenomena of special values at CM points. A remarkable recent theorem of Yingkun Li, establishing many cases of the so-called Gross–Zagier's algebraicity conjectures, asserts that certain special values of higher Green's functions are algebraic multiples of logarithms of algebraic numbers. In this talk, I'll explain how to write higher Green's functions in terms of periods of modular forms and derive from that a natural (but conditional) motivic explanation for algebraicity at CM points. This is part of joint work in progress with Francis Brown.