A renormalisation group analysis of the 4-dimensional weakly self-avoiding walk

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We discuss recent joint work with David Brydges which proves $|x|^{-2}$ decay of the critical two-point function for the continuous-time weakly self-avoiding walk on Z^4. The walk two-point function is identified as the two-point function of a supersymmetric field theory with quartic self-interaction, and the field theory is then analysed using renormalisation group methods.