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Symmetries of an Elliptic Net

Abstract: In 1948, Morgan Ward introduced the concept of an Elliptic Divisibility Sequence (EDS) as an integer sequence \((W_n)\) which satisfies the recurrence relation

\[ W_{m+n}W_{m-n}W_1^2 = W_{m+1}W_{m-1}W_n^2 - W_{n+1}W_{n-1}W_m^2, \]

and satisfies the additional property that \(W_m|W_n\) whenever \(m|n\). Of particular interest to Ward, were what he called symmetries of an EDS. Ward showed that if \((W_n)\) is an EDS with \(W_r = 0\), then we have

\[ W_{r+i} = ab^iW_i, \]

for some \(a\) and \(b\). In her Ph.D. thesis in 2008, Kate Stange generalized the concept of an EDS to an \(n\)-dimensional array called an Elliptic Net. We will discuss the connections between EDS’s, Elliptic Nets, and elliptic curves, and give a generalization of Ward’s symmetry theorem for elliptic nets.

EVERYONE IS WELCOME!

Visit the seminar web page at http://www.cs.uleth.ca/~nathannng/ntcoseminar/