

ON THE PSEUDOFORREST STRONG NINE DRAGON TREE CONJECTURE

Ben Moore

`Ben.Moore@umanitoba.ca`

University of Manitoba

(This talk is based on joint work with Sebastian Mies and Evelyne Smith-Roberge.)

I'll discuss the following theorem: Every graph with maximum average degree at most $2k + 2d/(k+d+1)$ has a decomposition into $k+1$ pseudoforests such that one of the pseudoforests F satisfies the following:

- It is a forest
- Each component has at most d edges,
- The diameter of the components of F is at most $2\ell + 2$, where ℓ is the floor of $\frac{d-1}{k+1}$ and at most $2\ell + 1$ if d is congruent to 1 mod $k + 1$.
- Furthermore, for any component K of F and any $z \in \mathbb{N}$, we have $\text{diam}(K) \leq 2z$ if $e(K) \geq d - z(k - 1) + 1$.

All of the bounds are best possible.