IREN DARIJANI, University of Lethbridge

Colourings of star systems

An e-star is a complete bipartite graph $K_{1,e}$. An e-star system of order $n > 1$, $S_e(n)$, is a partition of the edges of the complete graph K_n into e-stars. An e-star system is said to be k-colourable if its vertex set can be partitioned into k sets (called colour classes) such that no e-star is monochromatic. The system $S_e(n)$ is k-chromatic if $S_e(n)$ is k-colourable but is not $(k-1)$-colourable. If every k-colouring of an e-star system can be obtained from some k-colouring ϕ by a permutation of the colours, we say that the system is uniquely k-colourable. In this talk, we will first see some results on colourings of 3-star systems. Next, we generalize these results for e-star systems for any $e \geq 3$. Finally, we see some other results on unique colourings of e-star systems that for any $e \geq 3$.