TEXAS STATE UNIVERSITY

The rising STAR *of Texas*

*** Please note this talk has been changed to Friday, 9:00-10:00 AM. ***

Discrete Mathematics Seminar

Time:	Friday, April 16, 2021, 9:00 - 10:00 AM (Central Time)
Title:	On Covering number of Groups with trivial Fitting subgroup
Speaker:	Dr. Yang Liu, Tianjin Normal University, China
Zoom Link:	Meeting ID: 999 2462 8868, Password: 753321

Abstract:

Let G be a finite group and S be a subset of $\mathrm{Irr}(G)$. If for every prime divisor p of $|G|$ there is a character χ in S such that p divides $\chi(1)$, S is called a covering set of G. The covering number of G, denoted by $cn(G)$, is defined as the minimal number of $\mathrm{Card}(S)$, where S is a covering set of G and $\mathrm{Card}(S)$ is the cardinality of set S. The concept of covering number was introduced by Alvis and Barry when they considered the Hupperts $\rho - \sigma$ conjecture for simple groups and they proved that if G is a nonabelian simple group, then $cn(G) \leq 2$ unless $G \cong J_1$ or $\mathrm{PSL}(2, q)$ whose covering number equal to 3. Now we show that if G is a finite group with $F(G) = 1$, then the covering number $cn(G) \leq 3$. Especially, if $\mathrm{PSL}_2(q)$ or J_1 is not involved in G, then $cn(G) \leq 2$.