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**Brent A Nelson\*** ([brent@math.berkeley.edu](mailto:brent@math.berkeley.edu)). *An example of full von Neumann algebras under non-tracial finite free Fisher information assumptions.*

Suppose  $M$  is a von Neumann algebra equipped with a faithful normal state  $\varphi$  and generated by a finite set  $G = G^*$ ,  $|G| \geq 3$ . We show that if  $G$  consists of eigenvectors of the modular operator  $\Delta_\varphi$  and has finite free Fisher information, then the centralizer  $M^\varphi$  is a  $\text{II}_1$  factor without property  $\Gamma$  and  $M$  is a factor of type depending on the eigenvalues of  $G$ . We will also see that  $M$  is full when it is a type  $\text{III}_\lambda$  factor,  $0 < \lambda < 1$ . We use methods of Connes and Shlyakhtenko to establish the existence of diffuse elements in  $M^\varphi$ , followed by a contraction resolvent argument of Dabrowski to obtain the factoriality. The lack of property  $\Gamma$  in  $M^\varphi$  is obtained by studying a derivation arising from the free difference quotients of the generators, and applying a lemma of Curran, Dabrowski, and Shlyakhtenko. (Received August 10, 2015)