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Amanda A. Schaeffer Fry* (aschae6@msudenver.edu), MSU Denver Math & CS, Denver, CO 80217, and **C. Ryan Vinroot**, College of William and Mary, Williamsburg, VA. *Real classes of finite special unitary groups.*

If G is a group, an element $g \in G$ is said to be real in G if g is G -conjugate to g^{-1} , and is said to be strongly real in G if $hgh^{-1} = g^{-1}$ for some $h \in G$ such that $h^2 = 1$. We classify all conjugacy classes of the finite special unitary groups $SU_n(q)$ which are real and those which are strongly real. It was observed by Gow that there is a natural bijection between the real conjugacy classes of the finite general linear group $GL_n(q)$ and the finite unitary group $GU_n(q)$. Gill and Singh classified the real (and strongly real) conjugacy classes of the finite special linear group $SL_n(q)$, and showed that if n is not 2 mod 4 or q is not 3 mod 4, then a class in $SL_n(q)$ is real if and only if it is real in $GL_n(q)$, and otherwise a class in $SL_n(q)$ is real if and only if it is real in $GL_n(q)$ and has some elementary divisor of the form $f(t)^k$ where k is odd. Given the relationship between $GL_n(q)$ and $GU_n(q)$, one might hope for a parallel description of the real classes of $SU_n(q)$. Somewhat surprisingly, there is not in general. We show that there is a parallel description for real classes of $SU_n(q)$ unless n is divisible by 4 and q is 3 mod 4, in which case the description is somewhat complicated. (Received August 29, 2015)