1039-11-41  Stephen Choi* (kkchoi@math.sfu.ca), Department of Mathematics, Simon Fraser University, 8888 University Drive, Burnaby, B.C. V5A 1S6, Canada, and Kai Man Tsang and Tsz Ho Chan. An extension to the Brun-Titchmarsh theorem.

The Siegel-Walfisz theorem states that for any $B > 0$, we have $\sum_{p \leq x, p \equiv d \pmod{v}} 1 \sim x/(\varphi(v) \log(x))$ for $v \leq \log^B(x)$ and $(v,d) = 1$. This only gives an asymptotic formula for the number of primes in an arithmetic progression for quite a small modulus $v$ compared to $x$. However, if we are concerned only with an upper bound, the Brun-Titchmarsh theorem says that for any $1 \leq v < x$, we have $\sum_{p \leq x, p \equiv d \pmod{v}} 1 \ll x/(\varphi(v) \log(x))$. In this talk, we will discuss an extension to the Brun-Titchmarsh theorem that concerns the number of integers with exactly $s$ prime factors in an arithmetic progression. This is joint work with Kai Man Tsang and Tsz Ho Chan. (Received February 25, 2008)