

This is joint work with Valentin Blomer and Junxian Li. We study sums of one prime and two squares of almost-primes, that is to say, integers whose number of prime factors is less than some absolute fixed bound. We employ three main tools: an explicit formula for the number of representations of an integer by a binary quadratic form; results on additive problems with cusp forms which derive ultimately from a trace formula; and a lower-bound sieve.