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Goodearl and Letzter showed that the prime ideals of the ring of  $m \times n$  quantum matrices that are invariant under the natural action of the torus  $(\mathbb{C}^*)^{m+n}$  is finite; moreover, they showed that the prime spectrum breaks up into strata that are parameterized by these torus-invariant primes. Cauchon later gave an explicit formula for the number of torus-invariant primes in  $m \times n$  quantum matrices. We show how one can do an even finer enumeration, in which one counts the number of torus-invariant primes in  $m \times n$  quantum matrices whose stratum is  $d$ -dimensional. More generally, we give an explicit characterization of the torus-invariant primes whose stratum is  $d$ -dimensional. This is joint with Karel Casteels and Stephane Launois. (Received September 14, 2009)