

## 0.1 Special unitary groups $SU(n, F)$

The special unitary group,  $SU(n, F)$ , is the subgroup of  $U(n, F)$  where the determinants are 1.

That is,  $|M| = 1$

### 0.1.1 The determinant of unitary matrices

The determinant of the unitary matrices is:

$$\det U^* = \det U^{-1}$$

$$(\det U)^* = \frac{1}{\det U}$$

$$(\det U)^* \det U = 1$$

$$||\det U|| = 1$$