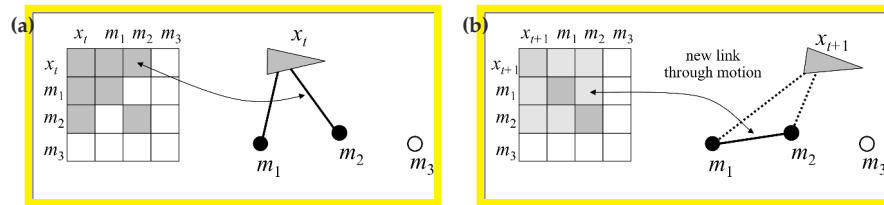
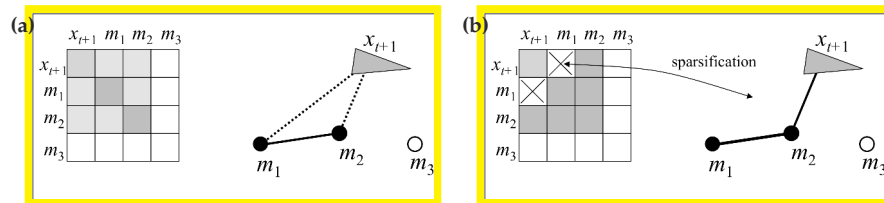


**Figure 12.3** The effect of measurements on the information matrix and the associated network of features: (a) Observing  $m_1$  results in a modification of the information matrix elements  $\Omega_{x_t, m_1}$ . (b) Similarly, observing  $m_2$  affects  $\Omega_{x_t, m_2}$ .



**Figure 12.4** The effect of motion on the information matrix and the associated network of features: (a) before motion, and (b) after motion. If motion is non-deterministic, motion updates introduce new links (or reinforce existing links) between any two active features, while weakening the links between the robot and those features. This step introduces links between pairs of features.



**Figure 12.5** Sparsification: A feature is deactivated by eliminating its link to the robot. To compensate for this change in information state, links between active features and/or the robot are also updated. The entire operation can be performed in constant time.