Significance on direct slepton model uu channel, trained network on full susy dataset  $(m_{\tilde{\ell}}, m_{\tilde{\chi}_1^0}) = (250, 75)$  $(m_{\tilde{\ell}}, m_{\tilde{\chi}_1^0}) = (125, 1)$  $10^1$  $(m_{\tilde{\ell}}, m_{\tilde{\chi}_1^0}) = (150, 1)$  $(m_{\tilde{\ell}}, m_{\tilde{\chi}_1^0}) = (150, 90)$  $(m_{\tilde{\ell}}, m_{\tilde{\chi}_1^0}) = (400,300)$  $(m_{\tilde{\ell}}, m_{\tilde{\chi}_1^0}) = (175, 1)$ Expected significance  $[\sigma]$  $(m_{\tilde{\ell}}, m_{\tilde{\chi}_1^0}) = (225, 50)$  $(m_{\tilde{\ell}}, m_{\tilde{\chi}_1^0}) = (250, 175)$  $10^{0}$  $(m_{\tilde{\ell}}, m_{\tilde{\chi}_1^0}) = (250, 210)$  $(m_{\tilde{\ell}}, m_{\tilde{\chi}_1^0}) = (100, 25)$  $10^{-1}$ 0.0 0.2 0.4 0.6 8.0 1.0 XGBoost output