non-interacting |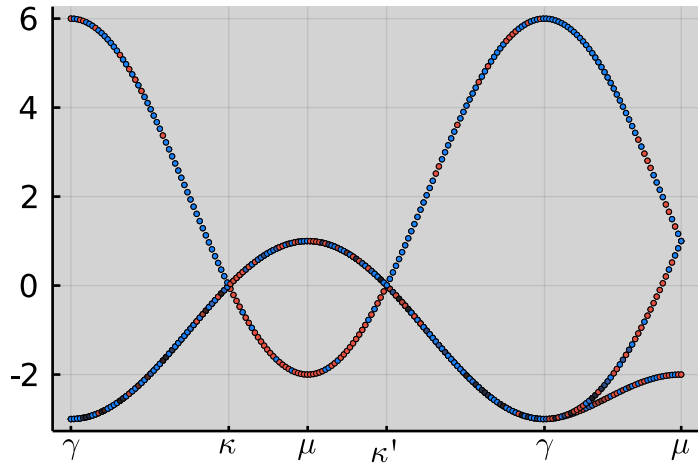 Hubbard meanfield