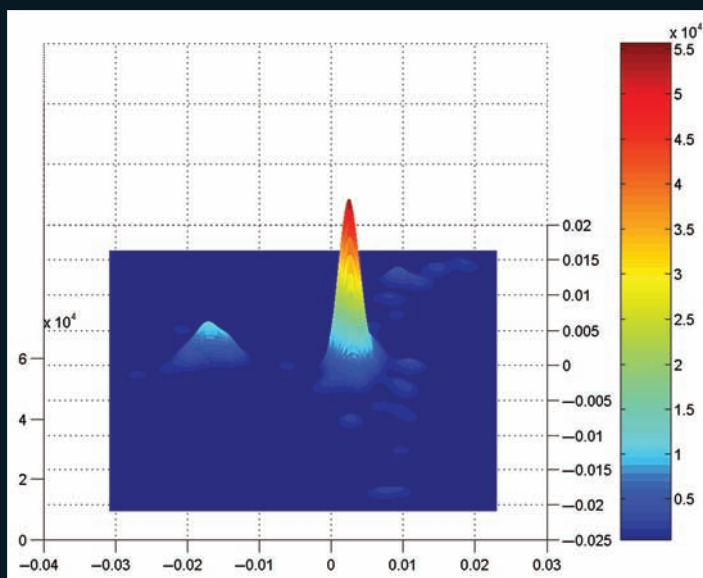


peds

protein engineering design & selection

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Prediction of which strain of influenza will be dominant during the next flu season entails tracking the evolution of the hemagglutinin protein of the virus. We propose a novel approach, based upon a mathematical projection of sequence data that are currently available, to identify clusters of incipient influenza strains. This method is able to identify a likely new dominant strain months to years before conventional methods, as demonstrated on a couple of well-known previous examples of H3N2 antigenic shift in the last decade. For example, this figure shows that by projecting the 2008-2009 A(H3N2) hemagglutinin protein sequence data, the new 2009 British Columbia H3N2 strain that emerged in March 2009 can be detected. This strain detection tool would appear to be useful for annual influenza vaccine selection. For further details please see He and Deem (pp. 935–946)

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