The method of fundamental solutions verse the method of particular solutions

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The method of fundamental solutions (MFS) is highly effective for solving homogenous partial differential equations. The MFS loses its attractiveness for solving inhomogeneous equations. In the past, radial basis functions have been used to interpolate the inhomogeneous term and thus obtain a particular solution. Through the available of the particular solutions, one can reduce the inhomogeneous equation to homogeneous equation which allows the MFS to be implemented to obtain homogeneous solution. This is a two stage approach. The alternative approach is to use the same concept of the MFS to solve the inhomogeneous solution directly using the radial basis functions. Instead of using fundamental solution as a basis function for homogeneous equation, we use special type of radial basis functions as a basis function to approximate the inhomogeneous equation directly. The numerical process of the later one is simple and effective. We will make numerical comparison of these two approaches in term of accuracy and simplicity.