

On the Approximation of the Controls for the Beam Equation

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We consider a finite difference semi-discrete scheme for the approximation of the boundary exact controls for the 1-D beam equation. Because of the high frequency spurious oscillations, it is known that the uniform (with respect to the mesh-size) controllability property of the semi-discrete model fails in the natural setting. We prove that this property is restored by adding a vanishing numerical viscosity.