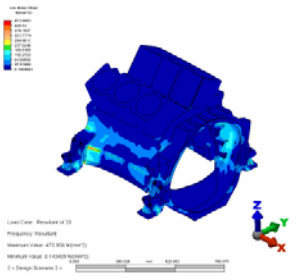
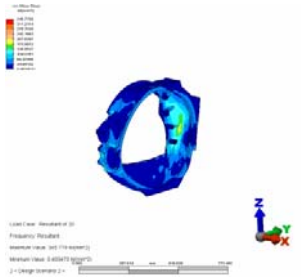
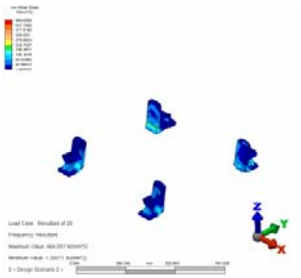


D shock response of three-direction coupling



E shock response of flywheel shell three-direction coupling



F shock response of Machine feet three-direction coupling

Figure 4. shock response of spring-beam three-direction coupling

## V. CONCLUSION

This paper respectively set up finite element model of diesel engine fasten component with consider bolt connection and without bolt connection, verified the difference between bolt connection and welding connection through mode test, calculated the shock response of diesel engine fasten component by DDAM method. The study got the conclusion as following:

*a)* Through test model analysis, verified the flexibility of bolt connection is greater than that of welding connection, and the natural frequency of model considering bolt connection is less than that of model without considering bolt connection.

*b)* Diesel engine skirt and machine feet, where the shock response is bigger, its inertia force is big and it's the sensitive area of mode. diesel engine machine feet's stress is bigger than the material's ultimate yield strength, therefore, diesel engine machine feet should choose materials with high yield strength.

*c)* The natural frequency of model without considering bolt connection is higher than that of model considering bolt connection, and the connection area of the mode without considering bolt connection would easily produce stress concentration which lead the stress value to large. This should be attention in frequency domain analysis

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