

## Studi terhadap fenomena geser pada sistem transmisi belt drive menggunakan deskripsi eulerian = Study on slip phenomena of belt drive transmission using eulerian description

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Deskripsi Lengkap: <https://lib.ui.ac.id/detail?id=20404321&lokasi=lokal>

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### Abstrak

[<b>ABSTRAK</b><br>

Studi ini dilaksanakan untuk mengobservasi fenomena geser yang terjadi pada sistem transmisi belt drive yang dikarenakan oleh kontak antara permukaan elastic dan rigid pada sistem tersebut. Beberapa zona geser yang diperkirakan terjadi pada zona kontak diamati menggunakan deskripsi eulerian dan shear theory. Kebisingan yang timbul pada putaran awal akibat stick-slip juga dipelajari dengan piranti simulasi ABAQUS. Hasil tesis ini menunjukkan bahwa pada pulley kecil, dua zona geser dapat timbul pada beberapa koefisien gesek dengan tegangan tertentu sedangkan frekuensi getaran resonansi yang dicermati diperkirakan menjadi faktor kebisingan.

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<b>ABSTRACT</b><br>

This study is conducted to observe the slip phenomena due to the contact of elastic and solid surfaces of belt drive transmission. Multiple slip zones that were considered to exist on small pulleys were observed using eulerian description and shear theory. Noises due to the stick slip on initial revolution were also studied using numerical simulation software of ABAQUS. This study proved that two slip zones on the contact's arc appeared on considerable tension for natural rubber material on several friction coefficients while several resonance frequencies have been observed to be the cause for the noises on revolution.; This study is conducted to observe the slip phenomena due to the contact of elastic and solid surfaces of belt drive transmission. Multiple slip zones that were considered to exist on small pulleys were observed using eulerian description and shear theory. Noises due to the stick slip on initial revolution were also studied using numerical simulation software of ABAQUS. This study proved that two slip zones on the contact's arc appeared on considerable tension for natural rubber material on several friction coefficients while several resonance frequencies have been observed to be the cause for the noises on revolution., This study is conducted to observe the slip phenomena due to the contact of elastic and solid surfaces of belt drive transmission. Multiple slip zones that were considered to exist on small pulleys were observed using eulerian description and shear theory. Noises due to the stick slip on initial revolution were also studied using numerical simulation software of ABAQUS. This study proved that two slip zones on the contact's arc appeared on considerable tension for natural rubber material on several friction coefficients while several resonance frequencies have been observed to be the cause for the noises on revolution.]