

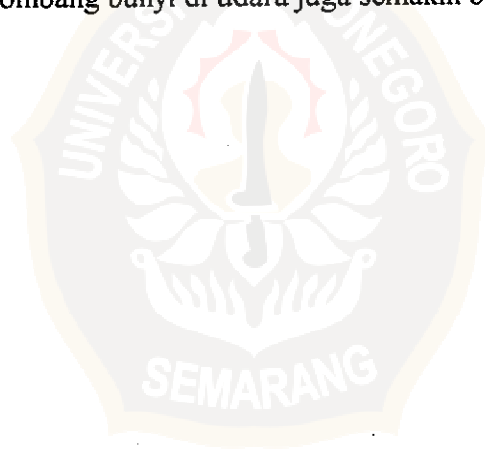
## INTISARI

Telah dilakukan penelitian penentuan koefisien absorpsi gelombang bunyi di udara. Besar koefisien absorpsi gelombang bunyi di udara dapat ditentukan dengan cara mengukur amplitudo maksimum dengan variasi jarak antara speaker dengan mic kondensor dan frekuensi bunyi. Pada percobaan ini udara sebagai mediumnya.

Dari hasil percobaan diperoleh bahwa nilai koefisien absorpsi gelombang bunyi di udara : Dari perhitungan untuk frekuensi bunyi :

1909,4293 Hz =  $0,1921 \pm 0,0003 \text{ m}^{-1}$ , 2434,9654 Hz =  $0,2169 \pm 0,0003 \text{ m}^{-1}$ ,  
2920,0246 Hz =  $0,2375 \pm 0,0004 \text{ m}^{-1}$ , 3404,1116 Hz =  $0,2564 \pm 0,0004 \text{ m}^{-1}$ ,  
3476,6896 Hz =  $0,2592 \pm 0,0004 \text{ m}^{-1}$ , 3974,1873 Hz =  $0,2771 \pm 0,0005 \text{ m}^{-1}$ ,  
4372,2059 Hz =  $0,2906 \pm 0,0004 \text{ m}^{-1}$ . Dari perhitungan grafik untuk frekuensi bunyi:  
1909,4293 Hz =  $0,27 \pm 0,01 \text{ m}^{-1}$ , 2434,9654 Hz =  $0,30 \pm 0,01 \text{ m}^{-1}$ ,  
2920,0246 Hz =  $0,322 \pm 0,009 \text{ m}^{-1}$ , 3404,1116 Hz =  $0,34 \pm 0,61 \text{ m}^{-1}$ ,  
3476,6896 Hz =  $0,37 \pm 0,04 \text{ m}^{-1}$ , 3974,1873 Hz =  $0,39 \pm 0,03 \text{ m}^{-1}$ ,  
4372,2059 Hz =  $0,45 \pm 0,05 \text{ m}^{-1}$ ,

Dari hasil-hasil di atas terlihat adanya hubungan antara frekuensi dengan koefisien absorpsi gelombang bunyi udara. Semakin besar frekuensinya maka koefisien absorpsi gelombang bunyi di udara juga semakin besar.



## ABSTRACT

Research for determining the coefficient of sound wave absorption in air has been done. The value of sound wave absorption coefficient can be determined by measuring maximum amplitude with various different distances between speaker and condenser mic and sound frequency. Air is used as the medium in this research.

From the research, the value of sound wave absorption coefficient in air is known : From the measurement of sound frequency :

1909,4293 Hz =  $0,1921 \pm 0,0003 \text{ m}^{-1}$ , 2434,9654 Hz =  $0,2169 \pm 0,0003 \text{ m}^{-1}$ ,  
2920,0246 Hz =  $0,2375 \pm 0,0004 \text{ m}^{-1}$ , 3404,1116 Hz =  $0,2564 \pm 0,0004 \text{ m}^{-1}$ ,  
3476,6896 Hz =  $0,2592 \pm 0,0004 \text{ m}^{-1}$ , 3974,1873 Hz =  $0,2771 \pm 0,0005 \text{ m}^{-1}$ ,  
4372,2059 Hz =  $0,2906 \pm 0,0004 \text{ m}^{-1}$ . From the graphic of sound frequency  
1909,4293 Hz =  $0,27 \pm 0,01 \text{ m}^{-1}$ , 2434,9654 Hz =  $0,30 \pm 0,01 \text{ m}^{-1}$ ,  
2920,0246 Hz =  $0,322 \pm 0,009 \text{ m}^{-1}$ , 3404,1116 Hz =  $0,34 \pm 0,61 \text{ m}^{-1}$ ,  
3476,6896 Hz =  $0,37 \pm 0,04 \text{ m}^{-1}$ , 3974,1873 Hz =  $0,39 \pm 0,03 \text{ m}^{-1}$ ,  
4372,2059 Hz =  $0,45 \pm 0,05 \text{ m}^{-1}$ ,

Those values show the relation between the frequency and the sound wave absorption coefficient in air. Larger frequency cause larger sound wave absorption coefficient in air.

