P. BET, C.L.S. OLIVEIRA, M. PONTI, P. COSTA CASTRO. ***Identification of fallers on gait accelerometer data.*** *Gerontechnology 2016;15(suppl):103s*; doi:10.4017/gt.2016.15.s.828.00 **Purpose** In addition to the high mortality rate due to falls in the elderly, their occurrence is considered a major public health problem and can be caused by several factors, including changes in functional mobility[1-3]. Thus, devices that detect the falls are an alternative to reducing their occurrences and their consequences. Accelerometers are ideal devices for supplying data from gait, and can detect falls, but the identification of fallers is still an open question[4]. This study aimed to identify fallers using accelerometer data from gait from three paired groups. **Method** This was a case-control study with a sample of 30 dwelling-community elderly residents (70% female), participants of Third Age groups in a city in the countryside of the State of Sao Paulo-Brazil, in 2015. Participants were divided into 3 groups: non-fallers, sporadic fallers (one fall on the past year) and recurrent fallers (more than one fall on the past year); paired by age, gender, mental state (MMSE) and Falls Efficacy Scale scores. All participants were at least 60 years old, active and non-overweight. Mean age of the non-faller group was 75.9±3.11 years old, of the sporadic faller group was 74.8±6.63 years old and of the recurrent fallers 74.7±8.73 years old (F=0.102, p=0.903). Gender proportion was 70%; 80% and 80% of women for each group respectively (X2=0.372, p=0.829). The subjects performed the six-minute walk test (6mwt), with a tri-axial accelerometer attached in front of the mass centre. For analysis of the accelerometer curves, were used tools able to extract amplitude information of s (t) over time, in order to verify what kind of feature would be able to differentiate the groups, even without knowing the labels. **Results & Discussion** The non-fallers covered a mean distance of 397.9±97.7m during the 6-min walk test, sporadic fallers 389.2±148.4m and recurrent fallers 370.5±98.5m (F=0.142, p=0.868). In this way, considering only the 6-min walk test, it would not be possible to identify these elderly as non-fallers, sporadic fallers and recurrent fallers. The analysis of acceleration curves were made using the spectrogram, these being a classified as faller and non-fallers as applicant. Thus, we observe (*Figure 1*), qualitative differences between the acceleration curves on individual analysis. These differences are more intense in the turning points and acceleration time windows, with good potential for discrimination via time-frequency analysis. Therefore, this analysis can led to successful products focused on assessing fall risk on active elderly.

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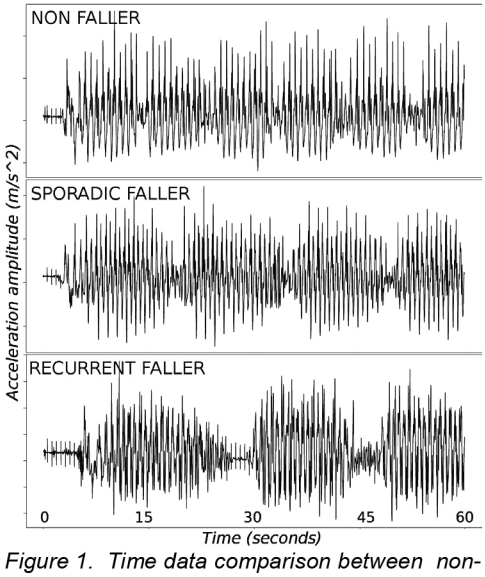

Figure 1. Time data comparison between non-faller (top), sporadic faller (centre) and recurrent faller (bottom)