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Erratum: "Effects of Reeling on Pipe Structural Performance—Part II: Analysis" [ASME J. Offshore Mech. Arct. Eng., 2017, 139(5), p. 051707; DOI: 10.1115/1.4037064]

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In our recent work on reeling of a pipeline onto a large-diameter rigid reel, we noticed a small error in the calculation of the moment acting on a section of pipe that is in contact with the rotating reel reported in the study by Liu et al. (2017). In their ABAQUS model of the process, the moment acting on a pipe section is evaluated from

$$\boldsymbol{M} = 2\sum_{i=1}^{N} \boldsymbol{F}_i \times \boldsymbol{d}_i \tag{1}$$

where $\boldsymbol{F}_i$ is the force vector acting on the ith node on the cross section, and $\boldsymbol{d}_i$ is its distance from the mid-surface of the pipe; both $\boldsymbol{F}_i$ and $\boldsymbol{d}_i$ are typically recorded in the global Cartesian coordinate system. However, because of the rotation of the reel, the orientation of the distance vector $\boldsymbol{d}_i$ changes, so for correct calculation of the moment, it must be calculated in the deformed configuration of the pipe. This is achieved by using the ABAQUS interface feature "*Free Body Cuts*," with the option "*Plot Contours on Deformed Shape*" active. If this option is not activated, the calculated moment is based on the undeformed coordinate system, and as a result, its value decreases as a section moves down the reel as shown in Fig. 6(*a*). As expected, when calculated in the deformed configuration, the moment remains constant as shown in the corrected Fig. C6(*a*). It is important to note that this error affects only the moment of the pipe on the reel, while all other variables reported in Fig. 6 are correct. This difference also removes the unnatural drop in the moment–curvature response at section A, in Fig. 9(*a*), which is now replaced by Fig. C9(*a*), bringing this local response to closer agreement with that of the 2D analysis shown in Fig. 8(*a*).

Figure C10(*a*) plots the corrected moment–reel rotation response of section A for three wind–unwind cycles, and Fig. C11(*a*) shows the corresponding corrected moment–curvature response. We reiterate that this error affected only the reported moment, while a section is on the reel. It has no impact on the reported evolution of ovality and axial strain that constitute the main thrust of the results in the article.

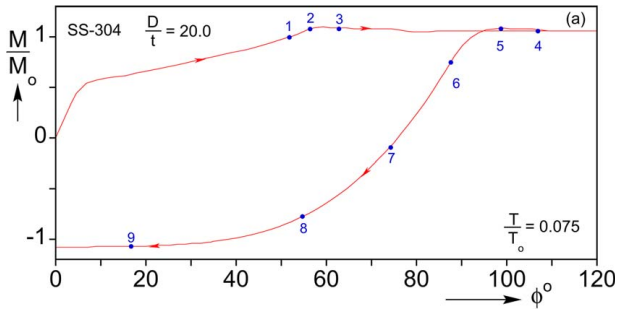

Fig. C6a Corrected moment at section A versus reel rotation

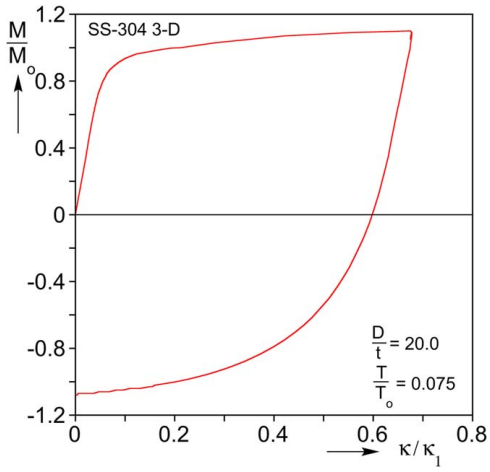

Fig. C9a Corrected moment–curvature response at section A

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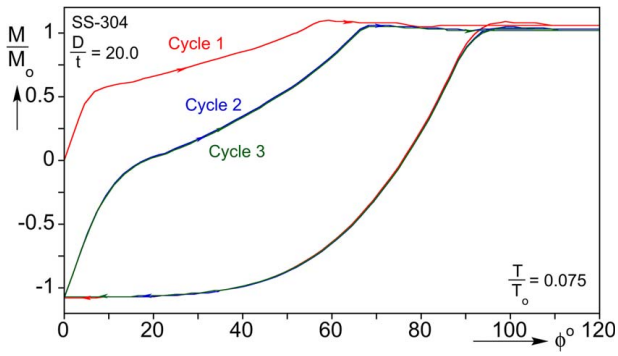

Fig. C10a Corrected moment at section A versus reel rotation for three wind-unwind cycles

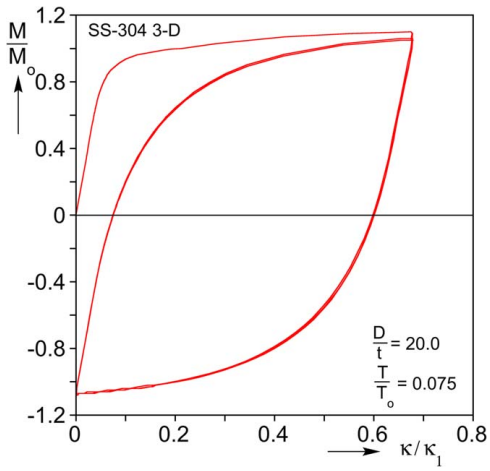

Fig. C11a Corrected moment–curvature response at section A for three wind-unwind cycles

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